



Adobe
Lightroom CC
and Photoshop CC
for Photographers

Bē
Mahesh Balasubramanian

CLASSROOM IN A BOOK®

The official training workbook from Adobe

Lesa Snider

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GETTING STARTED

It's a great time to be a photographer. Cameras are powerful and (somewhat) affordable, and there's a plethora of image management and editing software. This is great news in some respects, but confusing in others.

As a subscriber to Adobe Lightroom CC and Adobe Photoshop CC, you hold heaps of photo management and manipulation power in your hands. Although these two powerhouses share some common ground, they're vastly different programs. Each one was designed for specific tasks, and they were built to work together seamlessly to speed your workflow—it's surprisingly simple to fling images back and forth between the two. Your biggest challenge now is to figure out which program to use when.

Happily, you hold the answer in your hands in the form of this book. Once you learn why, when, and how to move between the two programs, you'll spend far less time in front of your computer and more time behind your camera.

Before we dive headfirst into using Lightroom and Photoshop together, there are some important things to know that this "Getting Started" covers. In other words, don't skip it.

The only way to achieve photographic workflow mastery is to understand exactly how Lightroom and Photoshop work, as well as what sort of real-world tasks each program excels at. This book is packed with exercise files that enable you to follow along, so it's important to know how to download and access those files. And finally, so that you don't have to intermingle the exercise files into your working Lightroom catalog, the section "Creating a Lightroom catalog for use with this book" teaches you how to create a nice, safe space for you to play with and learn this book's files.

So grab your favorite beverage and buckle in! You're in for a lot of fun.

About Classroom in a Book

Adobe Lightroom CC and Photoshop CC for Photographers Classroom in a Book[®] is part of the official training series for Adobe graphics and publishing software, developed with the support of Adobe product experts. The lessons are designed to let you learn at your own pace. If you're new to Adobe Lightroom or Adobe

Photoshop, you'll learn the fundamental concepts and features you'll need in order to work with these programs together. If you've been using Lightroom or Photoshop for a while, you'll find that Classroom in a Book teaches advanced features too, focusing on tips and techniques for using the latest versions of the applications together.

Although each lesson provides step-by-step instructions for creating a specific project, there's plenty of room for exploration and experimentation. Each lesson concludes with review questions highlighting important concepts from that lesson. You can follow the book from start to finish, or do only the lessons that match your interests and needs; that said, the "Getting Started" material is a *must* read.

Windows vs. Mac OS instructions

In most cases, Lightroom and Photoshop perform identically in both Windows and Mac OS. Minor differences exist between the two versions, mostly due to platform-specific issues out of the control of the programs. Most of these are simply differences in keyboard shortcuts, how dialogs are displayed, and how buttons are named. In most cases, screen shots were made in the Mac OS version of Lightroom and Photoshop and may appear differently from your own screen.

Where specific commands differ, they are noted within the text. Windows commands are listed first, followed by the Mac OS equivalent, such as Ctrl+C/Command+C.

Prerequisites

Before jumping into the lessons in this book, make sure you have a working knowledge of your computer and its operating system. Also make sure that your system is set up correctly and that you've installed the required software and hardware, because the software must be purchased separately from this book.

You need to install Adobe Lightroom CC, Adobe Photoshop CC, and the latest version of Adobe Camera Raw for Photoshop CC. You're welcome to follow along with versions of the programs as far back as Lightroom 4 and Adobe Photoshop CS6, but in that case some exercises in the book will not work as written. For system requirements and support, visit helpx.adobe.com/photoshop.html and helpx.adobe.com/lightroom.html.

This book was crafted specifically for using Lightroom CC and Photoshop CC together for photographers. Although it includes enough information to get you up and running in both programs, it's not a comprehensive manual. When you're ready to dive further into each program, pick up a copy of *Adobe Lightroom CC Classroom in a Book* and *Adobe Photoshop CC Classroom in a Book*.

Accessing the Web Edition

Your purchase of this book in any format includes access to the corresponding Web Edition hosted on peachpit.com. Your Web Edition can be accessed from any device with a connection to the Internet and it contains:

- The complete text of the book
- Hours of instructional video keyed to the text (plus bonus videos)
- Interactive quizzes

If you purchased an ebook copy from adobepress.com or peachpit.com of *Adobe Lightroom CC and Photoshop CC for Photographers Classroom in a Book*, the Web Edition will automatically appear on the Digital Purchases tab on your Account page. Click Launch to access the Web Edition.

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Lesson Files

To work through the exercises in this book, you will first need to download the lesson files from peachpit.com. You can download the files for individual lessons or download them all in a single file.

Accessing the Classroom in a Book lesson files

The lesson files can be accessed through the Registered Products tab on your Account page after you've registered your book as described in the previous section. Click the Access Bonus Content link below the title of your product to proceed to the download page. Click the lesson file links to download them to your computer. For step-by-step instructions on how to access the files, see the "Where are the Lesson Files" page at the beginning of the book.

Your Account page is also where you'll find any updates to the lesson files or to the book content (if anything's certain in the realm of software, it's that things change!). Look on the Lesson & Update Files tab to access the most current content.

- 1 Go to www.peachpit.com/redeem, and enter the code found at the back of this book. If you don't yet have a Peachpit.com account, follow the onscreen instructions to create one.
- 2 Click the Lesson & Update Files tab on your Account page to see a list of downloadable files. Click the links to download to your computer either the entire Lessons folder or the work folders for individual lessons.
- 3 Create a new folder inside the Users/*username*/Documents folder on your computer, and then name the new folder **LPCIB**.
- 4 If you downloaded the entire Lessons folder, drag that Lessons folder into the LPCIB folder you created in step 3.

Alternatively, if you downloaded folders for one or more individual lessons, first create a Lessons folder inside your LPCIB folder; then drag the individual lesson folder(s) into your LPCIB/Lessons folder.

- 5 Keep the lesson files on your computer until you've completed all the exercises.

The downloadable sample images are practice files, provided for your personal use in these lessons. It's illegal to use them commercially or to publish or distribute them in any way without written permission from Adobe Systems Inc. *and* the individual photographers who took the pictures.

Installing Lightroom and Photoshop

Before you begin using *Adobe Lightroom CC and Photoshop CC for Photographers Classroom in a Book*, make sure that your system is set up correctly and that you've installed the required software.

The Adobe Lightroom and Photoshop software are not included with *Adobe Lightroom CC and Photoshop CC for Photographers Classroom in a Book*; you must purchase the software separately. You can buy them together through the Adobe Creative Cloud Photography plan or with a Creative Cloud complete membership, which also includes InDesign and more.

Why use both Lightroom and Photoshop

The list of reasons for using both Lightroom CC and Photoshop CC in your workflow is lengthy, though most of it boils down to saving time in the management, editing, and preparation of your images for specific uses. Using the programs together means you can easily include your Photoshop masterpieces into Lightroom book, slideshow, print, and web projects. As you'll learn in this section, each program works in a completely different way and excels at particular tasks.

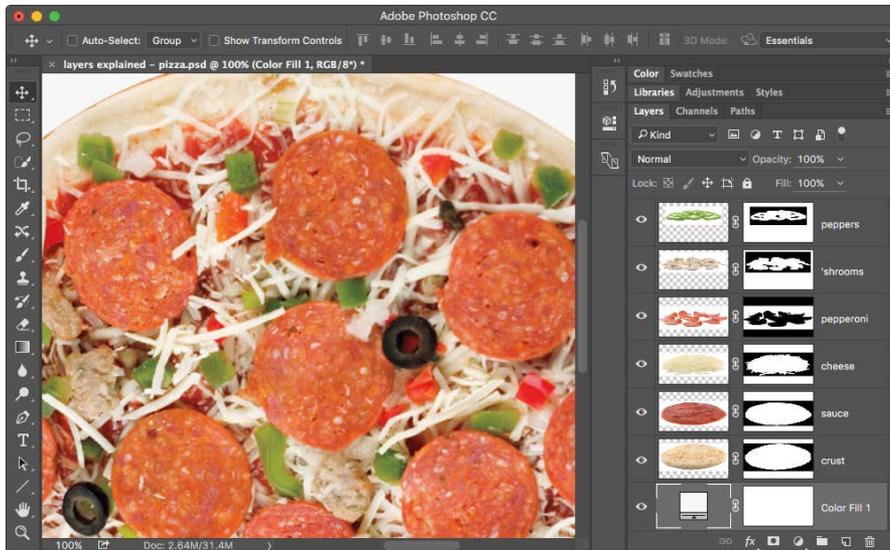
How Lightroom and Photoshop differ

At first glance, you may think Lightroom and Photoshop do the same thing, and in one aspect you'd be correct: Both include tools you can use to enhance your photographs. However, a closer look reveals that Lightroom and Photoshop differ in two important ways: *what* they do and *how* they do it.

When it comes to *what* the two programs do, think of it this way: Lightroom is broader and Photoshop is deeper. Lightroom was designed to handle a photographer's entire post-capture workflow, including offloading content from your memory card to your computer (or external drive), assessing, culling, rating, tagging, organizing, searching, editing, sharing, and outputting for various uses, including print templates, books, slideshows, and web galleries (whew!). Photoshop, on the other hand, was designed for a single task: editing.

With that in mind, it stands to reason that there would be some fundamental differences “under the hood,” so to speak, between how each program operates.

Photoshop is a *pixel editor*, meaning you can use it to change the individual pixels you captured in-camera. Although there are ways to edit a photo without harming it (say, by using layers), Photoshop is a destructive editor—you can undo a certain number of sequential edits while the document is open, but when you close the document, that ability vanishes. It's also very easy to save over your original files, especially if you shoot in the JPEG format, and unless you're using scripts or actions, you can work on only one image at a time.



Lightroom, on the other hand, is a *database*—a special kind of program that tracks all the files you tell it about. Databases perform their tracking magic by creating a support file that includes an individual entry for each file it knows about. If that's

● **Note:** Photoshop is over 25 years old; Lightroom is not yet 10. As a result, Lightroom is more streamlined and easier to use than Photoshop. Plus, Adobe designed it to excel at tasks that Photoshop doesn't.

● **Note:** Pixels are the tiny blocks of color that make up your photograph. The term is short for *picture element*. If you zoom far enough in to an image in Lightroom or Photoshop, you can see the individual pixels.

You can think of layers as the ingredients on this pizza (really!). By looking straight down at this pizza, you get a bird's-eye view of it—like the left side of this image, which is your document window. Although the pizza is made up of many layers (the different toppings, sauces, and dough), you see a single image. The Layers panel, on the right, shows you an exploded view. If some of the toppings don't cover the pizza's entire surface—such as the bell peppers and mushrooms—you can see through that layer to what's on the layers below.

clear as mud, consider another program you (likely) interact with all the time: the contacts program on your computer or smartphone. The contacts program is a database that points to a file containing an individual entry for each person you tell it about.

● **Note:** A physical and somewhat vintage database analogy is a Rolodex (database) and all the little cards (records) it contains.

● **Note:** If you're using Lightroom Mobile on a mobile device, you're editing previews of the images referenced by the Lightroom catalog on your desktop computer.

As you can see in this illustration, your Lightroom experience comprises many pieces and parts: your images (wherever they live), the Lightroom application, the catalog, and a folder of presets.

It's important to realize that Lightroom doesn't store your images; it stores *information* about your images in a *catalog* that contains a *record* for each image you import (technically speaking, the catalog *is* the database). Each record includes a smorgasbord of image (or video) information, including where the file lives on your drive (it can be anywhere you want); camera settings at capture; any descriptions, keywords, ratings, and so on that you apply in Lightroom's Library module; and a running list of *every* edit you *ever* make in Lightroom's Develop module. This essentially gives you unlimited sequential undos *forever*.

Although your edits are reflected in the image preview in Lightroom, they're applied only when you export a *copy* of the image—Lightroom never lays a hand on your original photographs, making it a true nondestructive editor. The database aspect lets you work on multiple images at a time, too, as well as copy-specific (or all) edits from one photo to many. You can also use Lightroom to create print templates, photo books, slideshows, and web galleries, and you can include your Photoshop documents in those projects.



We'll dig into the specifics of using both programs later in this book, but the concepts introduced here form a firm foundation for everything else you'll learn. Now let's take a look at which program you should use for which specific tasks.

Where Lightroom excels

Lightroom's database nature enables it to shine at many essential yet yawn-worthy management chores. It's also a powerful editor: You can use it to apply edits to an entire photo or to certain parts of it, you can sync or copy edits between one or more photos, and you can easily output those photos in myriad ways. Here's a short list of when to use Lightroom over Photoshop:

- Photo and video management

Lightroom's Library module is the perfect place to assess, compare, rate, and cull your images, as well as to apply descriptive keywords and other markers, such as colored labels and flags. As you'll learn in Lesson 1, "Importing and Managing Photos in Lightroom," the Library also sports several filters you can use to view a subset of your images, and you can easily organize images into *collections*.

Photoshop can't do any of that. Although you could install Adobe Bridge to pick up some of the organizational slack, it's a file browser and not a database. And Bridge can't create any of the projects mentioned in the previous section.

- Raw processing

You can edit many file formats in Lightroom's Develop module (TIFF, PSD, JPEG, PNG), but it excels at processing and translating *raw* files, the unprocessed sensor data that some cameras—and even some smartphones—can record.

Lightroom automatically maintains the wonderfully large range of colors (called *color space*) and high bit depth that a raw file includes. That's why you want to do as much processing to a raw file in Lightroom as you can and only pass the file over to Photoshop when you need to do something that Lightroom can't.

● **Note:** *Color space* refers to the range of colors available to work with. Raw processors use ProPhoto RGB, the largest color space to date (see the sidebar "Choosing a color space" in Lesson 4, "Lightroom—Photoshop Roundtrip Workflow," for more). *Bit depth* refers to how many colors the image itself can contain. For example, JPEGs are 8-bit images that can contain 256 different colors and tones in each of the three color channels: red, green, and blue. Raw images, on the other hand, can be 12-, 14-, or 16-bit, and the latter would contain a whopping 65,536 different colors and tones in each channel.

Photoshop's raw processor, Adobe Camera Raw, uses the same underlying engine as Lightroom. You'll learn how Camera Raw integrates with Lightroom in the Lesson 4 section "Keeping Lightroom and Camera Raw in sync."

- Global photo adjustments

Common global photo adjustments—cropping, straightening, fixing perspective and lens distortion, sharpening, adjusting tone and color, reducing noise, and adding edge vignettes—are incredibly easy to perform in Lightroom. Most of the controls are slider-based, highly discoverable, and logically arranged.

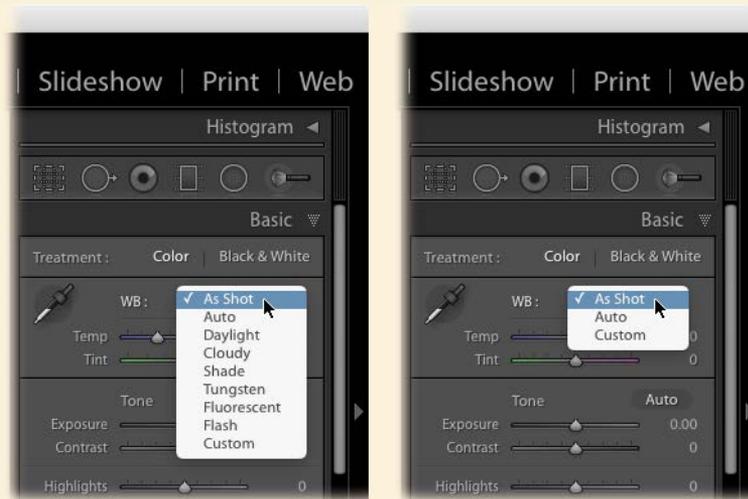
● **Note:** Raw isn't an acronym, so there's no need to write it in all caps even though many people and software companies do.

Raw vs. JPEG

You may not realize it, but when you shoot in the JPEG format, your camera processes the image by applying the settings buried deep within your camera's menu, such as noise reduction, sharpening, color and contrast boosting, color space, and some compression to save space on the memory card. Although you can edit a JPEG in both Lightroom and Photoshop, the changes your camera made when converting the sensor data into the JPEG are baked into the file and cannot be undone. (The same thing happens with a TIFF, and since it can produce dramatically larger file sizes than raw format, it's now rarely used as a capture format.)

None of that permanent in-camera processing happens with raw files, which is one reason why a JPEG and a raw file of exactly the same image probably won't look the same when you view them on your computer. Another reason is that raw files contain a wider range of colors and tones than JPEGs (*tones* refers to luminosity information that you can think of as brightness values). For the mathematically curious, 4 trillion colors and tones can theoretically be saved into a 14-bit-per-channel raw file, whereas a maximum of 16 million colors can be saved into a standard 8-bit-per-channel JPEG. (Raw files can be 12-, 14-, or 16-bit, depending on the camera.)

So using raw data in applications that can interpret it—say, Camera Raw, Photoshop, Lightroom, and so on—gives you far more editing flexibility because you have more data to work with and you can process that data however you want. Raw files also let you change the color of light, called *white balance*, captured in the scene. With a JPEG, the white balance is baked into the file, so all you can really do is shift the colors by fiddling with your image editor's Temperature and Tint sliders. As you can see here, Lightroom's white balance menu has far more options for a raw file (left) than it does for a JPEG (right).



You'll learn how to use these controls in Lesson 2, "Using Lightroom's Develop Module for Global Adjustments."

Photoshop is far less intuitive, due in part to its more than 25 years of development. Although it includes many powerful ways to adjust your photos—Levels, Curves, Shadows/Highlights, and so on—these controls are scattered throughout the interface and are much harder to use. That said, you can access the same sliders and local adjustment tools in Camera Raw or the Camera Raw filter, though that often requires an extra step.

- Local adjustments

Even Lightroom's *local* adjustment tools use sliders—those that affect certain parts of the image rather than the whole thing, including the Adjustment Brush, Graduated Filter, and Radial Filter—although the changes occur only in areas you mark by dragging a cursor or brush atop the image. These local tools make it easy to fix overexposed skies, add digital makeup, smooth skin, lighten teeth and wrinkles, enhance eyes, darken shiny areas, add extra sharpening to specific areas, and more. You can even add negative sharpening to a certain area to blur it! You'll learn how to perform these techniques in Lesson 3, "Using Lightroom's Develop Module for Local and Creative Adjustments."

Lightroom's Spot Removal brush can be set to either Healing (blends surrounding pixels) or Cloning (copies pixels with no blending) mode, meaning you can click or drag to remove blemishes, wrinkles, power lines, stray hairs, lipstick smudges, sensor spots—anything that's fairly small. You even get opacity control so that you can dial back the strength of the change.

● **Note:** Sensor spots are spots in your image caused by dust specks on the camera's sensor.

You can do all of that in Photoshop, but it can take longer because of the additional steps required to do it nondestructively.

- Creative color effects

As you'll learn in Lesson 3 in the section "Adding creative color effects," you can use Lightroom to make beautiful black-and-white images and partial color effects. You can also add sophisticated color tinting to the whole photo, or you can hand-paint certain areas with whatever color you want.

- HDR and panorama stitching

Lightroom offers a merge feature for combining multiple exposures into a single high dynamic range (HDR) image, as well as for stitching multiple images into a panorama. Once the images are combined or stitched, you can adjust tone and color using the global or local adjustment tools described earlier.

Photoshop includes the same auto-merge features for both HDR and panoramas; however, as the sections "Making HDR images" and "Making panoramas" explain in Lesson 5, "Lightroom to Photoshop for Combining Photos," it's easier to merge in Lightroom because of the easy-to-use controls for adjusting tone and color (a process the pros refer to as tone mapping). Plus,

Lightroom includes a slick feature for filling in the edges of a panorama named Boundary Warp.

- Processing multiple photos

Lightroom was built for high-volume photographers: You can use it to synchronize changes across an unlimited number of photos or you can copy and paste edits instead. You can sync or copy/paste global *and* local adjustments—the latter is great for removing sensor spots from a slew of images. And you get to choose exactly which edits are synced or copy/pasted.

You can also save a preset for almost anything you do in Lightroom, which can dramatically speed up your workflow. Presets can be applied during the import process, manually whenever you want, or when you export images. Preset opportunities include, but are not limited to, adding copyright information; file-naming schemes; any settings in the Develop module; settings for all the local adjustment tools; template customizations for books, slideshows, print, and web projects; identity plates (the branding that appears at the top left of the interface); watermarks; exporting at certain sizes and in a specific file format; and uploading online.

Processing multiple photographs in Photoshop requires scripts, complex actions, or the use of Adobe Bridge. Further, Photoshop presets are mostly limited to tool setup.

- Sharing, resizing, outputting, and watermarking

If you regularly prepare images for other destinations—say, to feature on your website, to email, to submit to a stock service or a *National Geographic* photo contest, or to post on Facebook or Flickr—you can automate the process using Lightroom export presets (they're called *publish services*).

Here's the gist: Drag the image(s) onto your preset, and click the Publish button; Lightroom exports the image with the file name and with your choice of dimensions—you can specify longest edge, file size maximum, and so on—quality, and file format, complete with metadata, additional sharpening, and a watermark (text or graphical). If you change a published image, Lightroom politely asks if you'd like to republish the modified version. You'll learn how to use publish services in Lesson 9, "Exporting and Showing Off Your Work."

To do this in Photoshop, you'd have to create a watermark action and then use the Image Processor script, which has far fewer options and can't keep track of modified versions. You can't automatically share images in Photoshop, either.

- Create pro-level photo books, slideshows, print templates, and simple web galleries

Lightroom includes several ways for you to show off your best work, whether it's for use in your own portfolio or to sell to a client. The books, slideshows, and

print templates are highly customizable; web galleries are less so, but they're still useful in a pinch. You'll learn how to create some of these projects in Lesson 9.

With enough patience and Photoshop skill, you could manually create a fine-art or picture-package-style print, or you could create a simplistic slideshow using the PDF Presentation command, but that's it.

Now, is Lightroom better at everything than Photoshop? No. In the next section, you'll learn when to send the image over to Photoshop for its special brand of pixel-pushing magic.

Where Photoshop excels

Photoshop is unmatched when it comes to creative editing and precise corrections. Although there's no need to open every photograph in Photoshop, a round-trip Lightroom-to-Photoshop workflow is necessary in the following situations.

- Combining photographs

Aside from merging multiple exposures into an HDR or stitching images into a panorama, Lightroom can't combine photos, because it doesn't support the concept of layers. So if you want to do any kind of compositing, whether it's to add texture or to create a collage, you need Photoshop. Same goes for swapping heads and eyes—say, to create a group photo where everyone is smiling or to fix eyeglass glare. You'll learn how to do some of this stuff in Lesson 5.

And if you want to manually merge images into an HDR, which can often greatly improve results, there are a couple of ways to do that in Photoshop. If you've stitched images into a panorama in Lightroom and you end up with a curved horizon, you can use Photoshop's Adaptive Wide Angle filter to straighten it. Lesson 5 has more on using Lightroom versus Photoshop for HDR and pano work.

- Making precise selections and targeted adjustments

Although you can perform many local adjustments in Lightroom, you can't precisely mark the area you want to change, at least not down to the pixel level. In Photoshop, this is called creating a *selection*, and the program includes several advanced methods for selecting an object in your photo, including tough stuff such as hair and fur. And once you've made a selection, you can hide those pixels using a *layer mask* (think of it as digital masking tape)—hiding pixels instead of deleting them increases your editing flexibility.

Selecting and masking are crucial when you want to swap out a background in a portrait, substitute a dull sky for a more exciting one, create a transparent background in a commercial product shot, or change the tone or color of a selected

● **Note:** Compositing means to combine two or more images into a single image.

area. You'll learn how to do these things in Lesson 6, "Lightroom to Photoshop for Selecting and Masking."

- High-end portrait retouching, body sculpting, and photo restoration

As you learned in the previous section, you can perform a lot of retouching in Lightroom. However, if your subject wants flawless skin or nips and tucks, or if you're restoring an old photo you need Photoshop. Some of these techniques are covered in Lesson 7, "Lightroom to Photoshop for Retouching."

- Removing and repositioning objects

Although Lightroom can make short work of zapping a blemish or a bird in a big blue sky, Photoshop's Content-Aware tools let you remove bigger objects, as well as reposition something in the photo. When you use these technologically advanced tools, Photoshop intelligently analyzes surrounding pixels, or another area that you designate, in order to make the removal or repositioning as realistic as possible. Most of these incredible tools are also covered in Lesson 7.

- Filling in the corners of a photo after straightening or a perspective correction

Lightroom includes a powerful Crop tool that you can use to straighten an image, and the Transform panel's Upright feature can correct perspective problems in a snap. However, both of these fixes can result in empty corners due to the rotation, which may cause you to crop the image more aggressively than you want to. In these cases, you can send the file to Photoshop to fill in the corners, which you'll learn how to do in the Lesson 4 section "Sending a raw file from Lightroom to Photoshop." That said, Photoshop's Crop tool has a Content-Aware option that can automatically fill in the corners for you after you straighten a photo.

- Text, design, illustration, 3D work, and video work

Embellishing photos with text or other nonphotographic artwork for use in graphic or web design is best done in Photoshop. Photoshop also includes several tools for creating custom illustrations, 3D text, and objects, and it sports a fairly impressive arsenal of video-editing tools.

So if you want to incorporate one or more award-winning photos into a business card, postcard, or social media cover image that includes text, you need to send that imagery over to Photoshop. And if you want to push a photo through text or any other shape, that's a job for Photoshop too. Some of these techniques are covered in Lesson 8, "Lightroom to Photoshop for Special Effects."

- Special effects

Photoshop includes a wide variety of filters and layer styles, so there's no end to the special effects you can create. For example, you can map one photo to the contours and curves of another (lizard skin, anyone?), and you can change the lighting in a scene, create highly specialized blur effects, turn a photo into a

pencil sketch or a realistic painting, and a whole lot more. Some of these tricks are covered in Lesson 8.

Of course, there are more scenarios in which Photoshop excels over Lightroom, but these are the ones you're most likely to encounter as a photographer. The next few sections explain how to access the exercise files included with this book, as well as how to create a Lightroom catalog.

Creating a Lightroom catalog for use with this book

As you learned in the section “How Lightroom and Photoshop differ,” a Lightroom catalog is a database that stores information about the photographs and video clips you import. Some photographers use a single catalog for all their Lightroom photographs, and some use several. For the purposes of following along with this book, it's best to make a separate catalog. Here's how:

1 Launch Lightroom.

When you first launch Lightroom, an empty Lightroom catalog is created in `Users/username/Pictures/Lightroom`. If you're using Lightroom 6, the name of the default catalog file is `Lightroom 6 Catalog.lrcat`. If you want to see the name of the current catalog at the top of Lightroom, press `Shift+F` several times to cycle to Normal screen mode.

2 Choose File > New Catalog in the menu bar at the top of the Library module.

3 In the dialog that opens, navigate to the LPCIB folder in your Documents folder (`Users/username/Documents/LPCIB`), and then enter **LPCIB Catalog** as the name of the new catalog.

4 Click Create. If you see a Back Up Catalog message, click the button labeled Skip this time.

This opens your new, empty LPCIB catalog. Under the hood, you've created, inside your `Documents/LPCIB` folder, an `LPCIB Catalog` folder that contains the image files for your new LPCIB catalog.

● **Note:** The Back Up Catalog message refers to backing up your Lightroom catalog only, not your images or presets.

You'll import the lesson files into this LPCIB catalog lesson by lesson, starting in the Lesson 1 section “Importing photos from a hard drive.” That section contains a detailed explanation of the import process you'll use throughout this book and when you're working with your own photos. It walks you through the process of importing files from a hard drive into Lightroom, using the Lesson 1 files as an example.

In each subsequent chapter (Lessons 2 through 9), you'll import the lesson files for that particular lesson by following the short instructions in the section “Preparing

for this lesson,” which you’ll find at the beginning of those lessons. If at any time you want more information about how to import lesson files, review the section “Importing photos from a hard drive” in Lesson 1.

Getting help

● **Note:** If you’ve downloaded the Help PDFs, you don’t need to be connected to the Internet to view Help in Lightroom or Photoshop. However, with an active Internet connection you can access the most up-to-date information.

Help is available from several sources, each one useful to you in different circumstances.

Help in the applications

The complete user documentation for Adobe Lightroom and Adobe Photoshop is available from the Help menu in each program. This content will display in your default web browser. This documentation provides quick access to summarized information on common tasks and concepts, and it can be especially useful if you are new to Lightroom or if you are not connected to the Internet. The first time you enter any of the Lightroom modules, you’ll see module-specific tips that will help you get started by identifying the components of the Lightroom workspace and stepping you through the workflow. You can dismiss the tips if you wish by clicking the Close button (x) in the upper-right corner of the floating tips window. Select the Turn Off Tips checkbox at the lower left to disable the tips for all of the Lightroom modules. You can call up the module tips at any time by choosing Help > *Module name* Tips. In the Lightroom Help menu you can also access a list of keyboard shortcuts applicable to the current module.

Help on the web

You can also access the most comprehensive and up-to-date documentation on Lightroom and Photoshop via your default web browser. Point your browser to helpx.adobe.com/lightroom.html or helpx.adobe.com/photoshop.html.

Help PDFs

Download PDF help documents, optimized for printing, at helpx.adobe.com/pdf/lightroom_reference.pdf or helpx.adobe.com/pdf/photoshop_reference.pdf.

Additional resources

Adobe Lightroom CC and Photoshop CC for Photographers Classroom in a Book is not meant to replace the documentation that comes with either program or to be a comprehensive reference for every feature. Only the commands and options used in the lessons are explained in this book. For comprehensive information about program features and tutorials, please refer to these resources:

Adobe Lightroom CC Help and Support: You can search and browse Lightroom Help and Support content from Adobe at helpx.adobe.com/lightroom.html.

Adobe Photoshop CC Help and Support: You can search and browse Photoshop Help and Support content from Adobe at helpx.adobe.com/photoshop.html.

Adobe Forums: forums.adobe.com lets you tap into peer-to-peer discussions, questions, and answers on Adobe products.

Adobe Creative Cloud Learn: helpx.adobe.com/creative-cloud/learn/tutorials.html provides inspiration, key techniques, cross-product workflows, and updates on new features.

Adobe TV: tv.adobe.com is an online video resource for expert instruction and inspiration about Adobe products, including a How To channel to get you started with your product.

Resources for educators: www.adobe.com/education and edex.adobe.com offer a treasure trove of information for instructors who teach classes on Adobe software. Find solutions for education at all levels, including free curricula that use an integrated approach to teaching Adobe software and that can be used to prepare for the Adobe Certified Associate exams.

Your author's website: www.PhotoLesa.com contains a plethora of helpful tutorials, as well as links to several books and educational videos.

Also check out these useful links:

Adobe Photoshop Lightroom CC product home page:

www.adobe.com/products/photoshop-lightroom.html

Adobe Photoshop CC product home page:

www.adobe.com/products/photoshop.html

Adobe Authorized Training Centers

Adobe Authorized Training Centers offer instructor-led courses and training on Adobe products, employing only Adobe Certified Instructors. A directory of AATCs is available at partners.adobe.com.

4

LIGHTROOM—PHOTOSHOP ROUNDRIP WORKFLOW

Lesson overview

This lesson teaches you how to adjust settings in both Lightroom and Photoshop to ensure you're passing the highest-quality files back and forth between the two programs. You'll also learn how to send files from Lightroom to Photoshop in a variety of formats, as well as how to reopen a file within Lightroom that you edited in Photoshop. In fact, this may be one of the most important lessons in this book because it covers the mechanics of a typical roundtrip workflow between Lightroom and Photoshop.

In particular, this lesson teaches you how to:

- Configure Lightroom's External Editing preferences for use with Photoshop or another editor
- Configure Photoshop's Color settings to match what you're using in Lightroom
- Set up Photoshop's Maximize Compatibility preference
- Keep Lightroom in sync with Photoshop's Camera Raw plug-in
- Send a raw file from Lightroom to Photoshop, pass the Photoshop file back to Lightroom, and then reopen the Photoshop file from within Lightroom
- Send a JPEG from Lightroom to Photoshop
- Send a raw file from Lightroom to Photoshop as a Smart Object



You'll need 1 to 2 hours to complete this lesson.



Setting up Lightroom and Photoshop to work together ensures you're passing the highest-quality photos back and forth between the two programs.

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Preparing for this lesson

Before starting this lesson, be sure you do the following:

- 1 Follow the instructions in the “Getting Started” lesson at the beginning of this book for setting up an LPCIB folder on your computer, downloading the lesson files to that LPCIB folder, and creating an LPCIB catalog in Lightroom.
- 2 Download the Lesson 4 folder from your account page at www.peachpit.com to *username/Documents/LPCIB/Lessons*.
- 3 Launch Lightroom, and open the LPCIB catalog you created in “Getting Started” by choosing File > Open Catalog and navigating to the LPCIB Catalog. Alternatively, you can choose File > Open Recent > LPCIB Catalog.
- 4 Add the Lesson 4 files to the LPCIB catalog using the steps in the Lesson 1 section “Importing photos from a hard drive.”
- 5 In the Library module’s Folders panel, select Lesson 4.
- 6 Set the Sort menu beneath the image preview to File Name.

In the next section, you’ll learn how to set up various preferences and settings in both Lightroom and Photoshop so they work together as a team.

Setting up Lightroom and Photoshop for smooth integration

Before you start flinging photos back and forth between Lightroom and Photoshop, there are some settings to adjust in both programs to ensure you’re moving between the two programs at the highest possible quality.

In the next few sections, you’ll learn how to adjust Lightroom’s preferences to control what kind of file it sends to Photoshop. You’ll also adjust Photoshop’s settings so the color space you’re using in Lightroom matches that of Photoshop. Next, you’ll learn how to keep Lightroom and Photoshop’s Camera Raw plug-in in sync, and then you’ll dig into how to send files back and forth between the two programs.

Although these first few sections don’t cover the most exciting topics in this book, this information is crucial for your success in using the programs together. Happily, you have to adjust these settings only once. So let’s dive in and get it done!

Configuring Lightroom’s External Editing preferences

Lightroom’s External Editing preferences determine exactly how files are passed from Lightroom to Photoshop. You can control file format, bit depth, color space—all of which are explained in this section—as well as file naming conventions and how the Photoshop files are displayed back in Lightroom.

And as you're about to learn, you can set up an additional external editor, which is handy for using different settings for passing files to Photoshop for different uses, or for using an external editing program *other* than Photoshop.

Setting your primary external editor preferences

Lightroom automatically scours your hard drive for the latest version of Photoshop and picks it as the primary external editor. To control exactly how Lightroom sends files to Photoshop, use these steps:

- 1 In Lightroom, choose Edit > Preferences (Windows) or Lightroom > Preferences (Mac OS), and click the External Editing tab.

The settings in the top section of the resulting dialog determine the properties with which a file opens in Photoshop when you later choose the first menu item in Lightroom's Photo > Edit In menu. (If you don't change these settings, their default values are used.)

- 2 Choose PSD from the File Format menu to preserve the quality you've got in Lightroom, as well as any layers you add in Photoshop.



- 3 From the Color Space menu, choose the range of colors you want to work with. If you're shooting in raw, choose ProPhoto RGB. If you're shooting in JPEG, choose AdobeRGB instead.

As you can see in the sidebar "Choosing a color space," ProPhoto RGB encompasses the widest possible range of colors and protects colors captured by your camera from being clipped or compressed. Since a raw file doesn't have a conventional color profile until it's rendered by a pixel editor, such as Photoshop (or by exporting it from Lightroom), choosing ProPhoto RGB here preserves that broad color range when you edit it in Photoshop.

JPEGs, on the other hand, can't use the broad color range that raw files do. If you're shooting in JPEG format, your largest color-range option is AdobeRGB.

- 4 From the Bit Depth menu, choose 16 bits/component if you're shooting in raw format or 8 bits/component if you're shooting in JPEG format.

Bit depth refers to how many colors the image itself contains. The goal is to keep as much color detail as you can for as *long* as you can.

● **Note:** Adobe Photoshop Elements is the only other application that you can designate as your primary external editor in Lightroom. Although you can use other programs as external editors, you have to set them up as additional external editors.

▶ **Tip:** TIFF supports layers too, but it creates a larger file size than PSD.

● **Note:** If you're not planning to print the image on a high-end, wide-gamut printer that uses seven or more inks, you may want to use AdobeRGB instead of ProPhoto RGB.

Choosing a color space

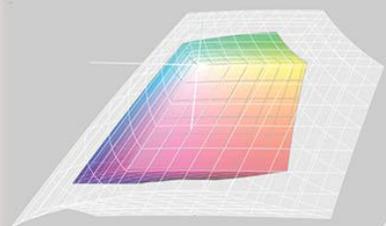
Color space refers to the range of colors you want to work with. Here's what you need to know about choosing the one that's right for you:

- AdobeRGB is the most popular workspace to date. It includes a wide range of colors, so it's perfect for designers and photographers. It's also great for printing on inkjet printers and commercial presses.

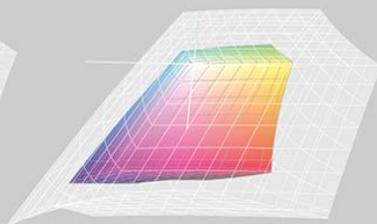
You can also change your digital camera's color profile to match what you use in Photoshop. For example, most cameras are initially set to sRGB mode, but you can switch to AdobeRGB instead. Alas, you'll have to dig out your owner's manual to learn how, but the increased range of colors and monitor consistency can be worth it.

- ProPhoto RGB is currently the largest workspace in use and is the one used by programs that process raw images. It's the native workspace of Lightroom and of Photoshop's Camera Raw plugin. In the infographic shown here, the ProPhoto RGB workspace is shown in white with the other workspaces superimposed atop it.
- sRGB is slightly smaller than AdobeRGB (1998). It is the Internet standard, so it's perfect for prepping images for use on the web, in presentation programs, and in videos and for submitting to online printing companies (labs such as www.mpix.com and www.nationsphotolab.com). This is the RGB workspace that Photoshop uses unless you pick another one.

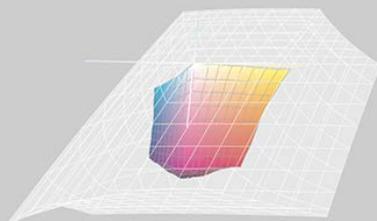
The CMYK workspace, on the other hand, represents the smaller number of colors that are reproducible with ink on a commercial printing press. The bottom image shows the ProPhoto RGB workspace compared to the color gamut of the truly incredible human eye.



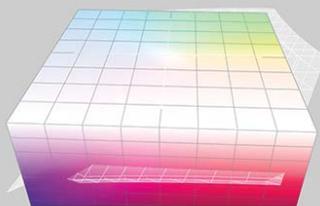
ProPhoto RGB vs. AdobeRGB (1998)



ProPhoto RGB vs. sRGB



ProPhoto RGB vs. CMYK



ProPhoto RGB vs. human eye

JPEGs are 8-bit images that can contain over 16 million colors. Raw images, on the other hand, can be 16-bit and contain over 280 trillion colors. So if you've got 16-bit files, send them to Photoshop and reduce them to 8-bit only if you need to do something in Photoshop that doesn't work on 16-bit files (say, running a filter) or when you're ready to export the image from Lightroom for use elsewhere.

- 5 Leave Resolution set to its default value of 240.

Resolution determines pixel density and thus pixel size when the image is *printed*. Leave it at 240 ppi, which is a reasonable starting point for a typical inkjet printer, and then adjust the resolution as necessary when you export the edited file from Lightroom.

- 6 Don't close the dialog yet; you'll use it in the next section.

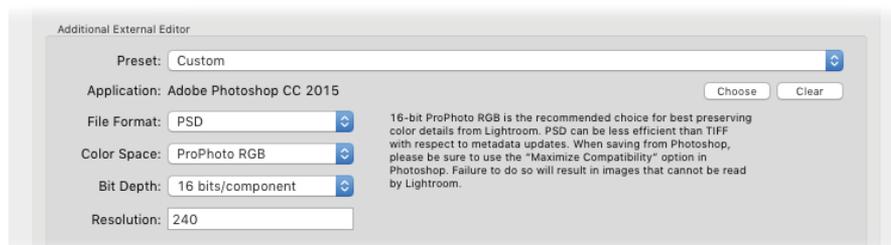
From this point forward, whenever you select a thumbnail (or several) in Lightroom's Library module and choose Photo > Edit In > Edit In Adobe Photoshop, or when you press the keyboard shortcut Ctrl+E/Command+E, Lightroom uses these settings.

Setting additional external editor preferences

You can designate one or more additional external editors that also appear in Lightroom's Photo > Edit In menu. Doing so gives you a choice of editors or a choice of settings for the same editor.

Additional editors can be third-party programs or plug-ins such as Adobe Photoshop Elements, Alien Skin's Exposure X, ON1 Software, and so on. You can even create additional configurations for Photoshop—each with settings geared toward particular kinds of photos or uses.

For example, you may set up Photoshop as an additional external editor with options suitable for photos destined for the web. The following steps are basically the same as in the previous exercise, but these discuss all the options as they relate to *web* use:



- 1 Click Choose to the right of the Application field in the Additional External Editor section of the dialog.

● **Note:** PPI stands for pixels per inch. DPI, on the other hand, stands for dots per inch. The latter term is used when referencing printers, because many printers use a dot pattern to reproduce an image

● **Note:** Only Photoshop or Photoshop Elements can be your primary external editor. If you have neither of those programs installed, the commands for editing in a primary external editor aren't available in the first section of Lightroom's Photo > Edit In menu. That said, you can still designate other applications in the Additional External Editor section and then choose them from the second section of the Photo > Edit In menu.

● **Note:** When choosing an external editor, be sure to click the actual application file (the .exe or .app file) and not the application folder.

● **Note:** Anytime you convert an image in a large color space to a smaller one, its colors may shift. That's why it's important to view the image in the smaller color space (a process known as soft-proofing) before you export it. You'll learn how to do that in Lesson 9.

▶ **Tip:** You can use the Additional External Editor section to configure as many external editing preferences as you like. Simply use the Preset menu to save each one as a preset. You won't see them all listed in the Preferences dialog; they merely stack up in the second section of Lightroom's Edit In menu.

● **Note:** You can expand and collapse a stack by selecting it in the Library module's Grid view and then pressing S on your keyboard.

- 2 In the operating system window that opens, navigate to Photoshop's .exe program file (Windows) or Photoshop's .app application file (Mac OS). In the resulting dialog, click Use Anyway.

If the same version of Photoshop you select here is also your primary external editor, Lightroom warns you that you're already using this version of Photoshop as an editor. Clicking Use Anyway dismisses the warning and allows you to use the same version of Photoshop—with different settings—as both an additional external editor and the primary external editor (both of which are available via a keyboard shortcut).

- 3 Choose PSD from the File Format menu.

As mentioned earlier, this keeps the quality you have in Lightroom and supports any layers you create in Photoshop. You'll learn how to export a JPEG you can post online in Lesson 9, "Exporting and Showing Off Your Work."

- 4 Choose ProPhoto RGB or AdobeRGB from the Color Space menu.

As you learned in the sidebar "Choosing a color space," sRGB is the Internet standard. However, since sRGB is a *smaller* color space than both ProPhoto RGB and AdobeRGB, you'll usually get better results if you save the step of reducing colors until you're ready to *export* the image from Lightroom. When you do that, Lightroom can take the (potentially) billions of colors you're working in and convert them to the *best* 16 million that are available in an 8-bit sRGB file.

- 5 Choose 8 bit (JPEG) or 16 bit (raw) from the Bit Depth menu.

Here again, it's best to keep maximum data in the photo while you're passing it back and forth between editors. When you export a copy of the edited photo in JPEG format for web use, Lightroom will reduce it to 8-bit automatically.

- 6 Leave Resolution set to its default value.

When you're preparing a photo for the web, it's the pixel dimensions, not the resolution, that determine image size. You can specify pixel dimensions in Lightroom's Export dialog.

From this point forward, these settings will be used when you choose Photo > Edit In and the second menu item: Edit in Photoshop.exe/Edit in Adobe Photoshop CC.app (or when you press the keyboard shortcut Ctrl+Alt+E/Command+Option+E).

Alternatively, you can click the Preset menu and choose Save Current Settings as New Preset. In the dialog that opens, enter a meaningful name for the options you configured, such as **PS web**, and then click Create.

If you go this route, the preset you saved appears as a menu item in the second section of Lightroom's Photo > Edit In menu.

- 7 Leave the External Editing Preferences dialog open for the next section of the lesson.

Setting the stacking preference

When you send a file from Lightroom to Photoshop, the PSD that comes back to Lightroom appears next to the original file in the Library module. In some cases, you may also generate copies of the PSD—if, say, you want to create different versions of it.

To reduce the clutter in your library, you may want to turn on Stack With Original to have Lightroom stack your PSD(s) into a pile with the original photo.

Doing so creates a collapsible group, known as a *stack*, of thumbnails. When you expand a stack, your PSDs are displayed side by side in the Library module in Grid view and in the Filmstrip. This makes related files easy to spot.

Configuring Adobe Photoshop Elements as an external editor

You can configure Lightroom to use Adobe Photoshop Elements as your primary or additional external editor too. The process is roughly the same, but there are a few things to keep in mind.

First, if you have Elements but not Photoshop on your computer, Lightroom automatically picks Elements as the primary external editor.

Second, if you have both Elements and Photoshop on your computer, you can designate Elements as an additional external editor. To do that, be sure to navigate to the Elements Editor application file, not the alias (shortcut) in the root level of the Elements Editor folder. To find the *real* application file, use these paths:

- C:\Program Files\Adobe\Photoshop Elements\Photoshop Elements Editor.exe (Windows)
- Applications/Adobe Photoshop Elements/Support Files/Adobe Photoshop Elements Editor (Mac OS)

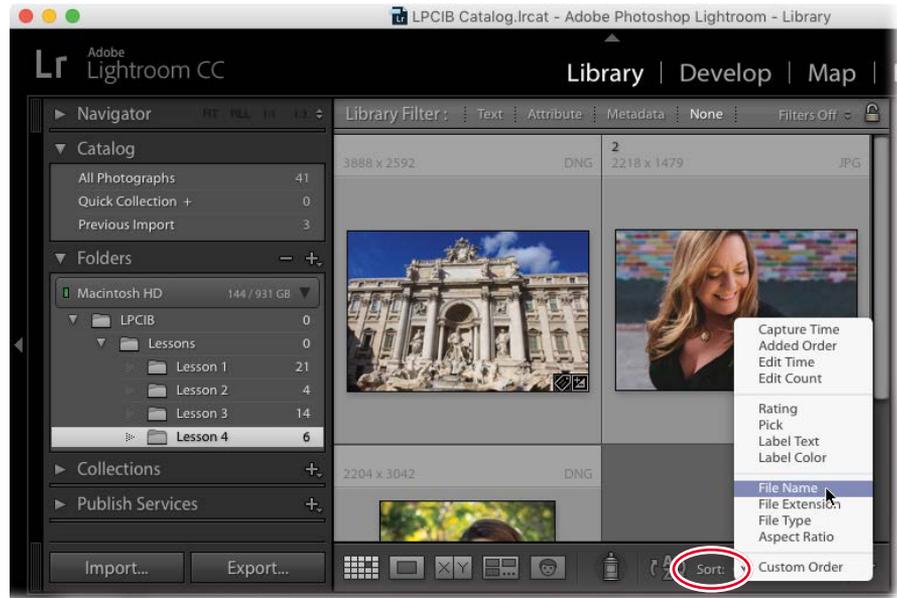
If you pick the alias or shortcut instead and then try to send a file from Lightroom to Elements, the application will open but the photo won't.

Third, Elements works only in the AdobeRGB and sRGB color spaces. So if you're sending files from Lightroom to Elements, choose AdobeRGB, not ProPhoto RGB. You'll also notice these commands missing from Lightroom's Photo > Edit In menu: Open as a Smart Object, Merge to Panorama, and Merge to HDR Pro.

However, when a stack is collapsed, only one thumbnail is visible in the grid and the Filmstrip, so you can't see all of its associated files. Therefore, you may want to leave Stack With Original turned off, and instead rely on the Library module's Sort menu to keep original photos and their associated PSDs together.

● **Note:** If you don't see the toolbar in the Library module, press T on your keyboard.

To do that, click the Sort menu in the toolbar at the bottom of the Library module, and choose File Name or Capture Time.



Setting the file naming preference

The Template menu at the bottom of the External Editing Preferences dialog lets you specify how Lightroom names the files you've edited in Photoshop. The word "edited" is added automatically, but you can change the naming scheme to whatever you want (files are given the PSD extension automatically).

For the purposes of this lesson, stick with the default file naming scheme. However, if you want to change it later on, click the menu at the bottom of the External Editing Preferences dialog, and choose Template > Edit to open the same Filename Template Editor you learned about in the Lesson 1 section "Renaming your photos."

The next section teaches you about the changes you need to make to Photoshop to make it play nicely with Lightroom.

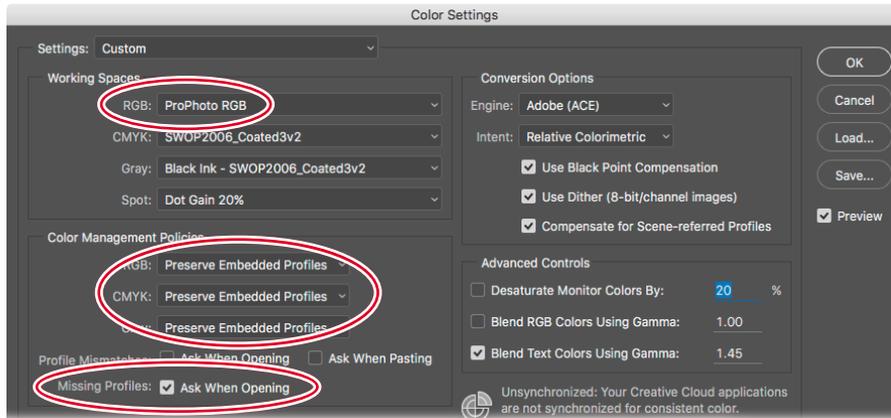
Configuring Photoshop's Color settings

Now that Lightroom's settings are configured, you can turn your attention to Photoshop. In this section, you'll learn how to make Photoshop's color space match the one you told Lightroom to use when it sends a file to Photoshop. And in order

for layered PSDs to be visible in Lightroom, there's a special option to turn on. Here's how to do all of that:

- 1 In Photoshop, choose Edit > Color Settings.
- 2 In the Working Spaces section, choose ProPhoto RGB or AdobeRGB from the RGB menu. The choice you make here should match the choice you made earlier in Lightroom's External Editing preferences.
- 3 In the Color Management Policies section, choose Preserve Embedded Profiles from the RGB menu.
- 4 Turn on Missing Profiles: Ask When Opening, and leave the other options turned off.

With these settings, the files you send from Lightroom to Photoshop should open in the correct color space. And if Photoshop encounters a file that doesn't have an embedded profile, you get a dialog asking how you'd like to proceed. In that case, choose Assign Working RGB, and click OK.



Note: If you're using Photoshop Elements as an external editor, you need to adjust its color settings too. To do that, launch the Elements Editor and choose Edit > Color Settings. In the dialog that opens, choose Always Optimize for Printing, and click OK. This makes Elements use the AdobeRGB color space. (Choosing Always Optimize for Computer Screen uses the smaller sRGB color space instead.)

- 5 Click OK in the Color Settings dialog to close it.

Now let's take a look at how to create Photoshop files that Lightroom can preview.

Configuring Photoshop's Maximize Compatibility preference

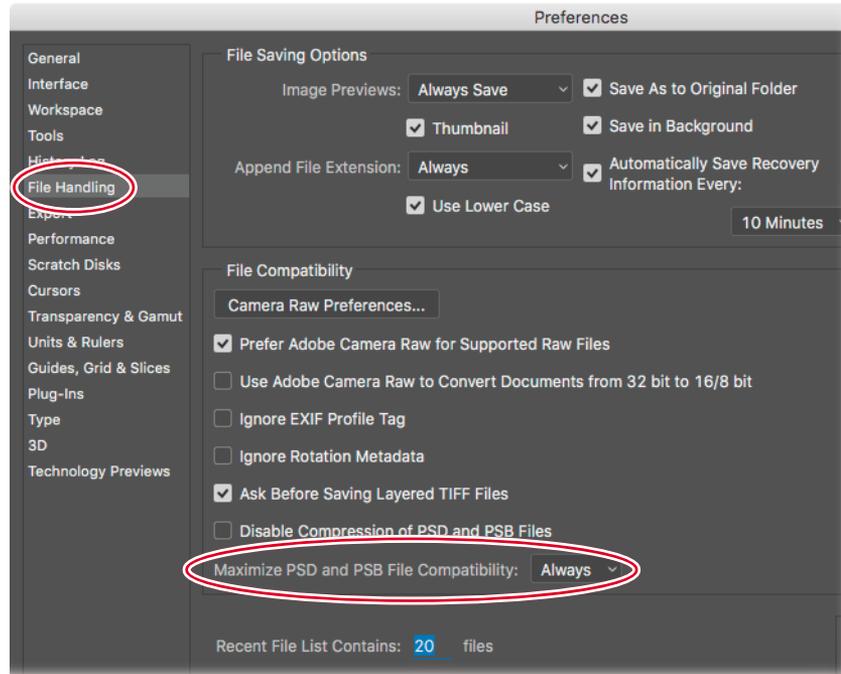
If you followed the advice of this book and told Lightroom to send files to Photoshop in PSD format, there's one more Photoshop setting to adjust.

Lightroom doesn't understand the concept of layers, so in order for layered PSDs to be visible in Lightroom, Photoshop needs to embed a flattened layer into each document. This flattened layer is what you see in Lightroom.

- 1 In Photoshop, choose Edit > Preferences > File Handling (Windows) or Photoshop > Preferences > File Handling (Mac OS).

● **Note:** If you assigned Photoshop Elements as your external editor, you need to do this in Elements too. In the Elements Editor, choose Edit > Preferences > Saving Files (Windows) or Adobe Photoshop Elements Editor > Preferences > Saving Files (Mac OS).

- 2 In the File Handling Preferences dialog, choose Always from the Maximize PSD and PSB File Compatibility menu.
- 3 Click OK to close the dialog.



Once you do this, you'll be able to see your PSDs in Lightroom.

The next section teaches you how to keep your version of Lightroom synced with Photoshop's Camera Raw plug-in.

Keeping Lightroom and Camera Raw in sync

Lightroom, at its heart, is a raw converter whose job is to convert the data in a raw file into an image that can be viewed and edited onscreen. Photoshop has a raw converter too: a plug-in named Camera Raw. Camera Raw and Lightroom use the same raw conversion engine, and when Adobe updates one, it usually updates the other with a matching version.

This is important because when you send a raw photo from Lightroom to Photoshop, Photoshop uses Camera Raw to render the raw data into pixels you can see and work with onscreen. If you don't have matching versions of Lightroom and Camera Raw, you may encounter a mismatch warning in Lightroom and you may have content issues as you pass the file back and forth. For more on this topic, see the sidebar "Encountering a Lightroom–Camera Raw mismatch."

To check which versions of the Lightroom and Camera Raw are installed on your computer, follow these steps:

- 1 In Lightroom, choose Help > About Lightroom (Windows) or Lightroom > About Lightroom (Mac OS). A screen opens that shows your version of Lightroom. It also reports the version of Camera Raw that's fully compatible with your version of Lightroom. Click the screen to close it.
- 2 In Photoshop, choose Help > About Photoshop (Windows) or Photoshop > About Photoshop (Mac OS). Your version of Photoshop appears on the screen that opens. Close the screen by clicking it.
- 3 Also in Photoshop, choose Help > About Plug-Ins > Camera Raw (Windows) or Photoshop > About Plug-In > Camera Raw (Mac OS). Your version of the Camera Raw plug-in is reported on the screen that opens. Click the screen to close it.

Encountering a Lightroom– Camera Raw mismatch

If you have mismatched versions of Lightroom and Camera Raw installed on your computer, you may get a mismatch warning in Lightroom when you try to send a raw file to Photoshop.

Although that's not the end of the world, it's important to understand the options Lightroom gives you, which are

- Cancel closes the warning dialog without sending the file to Photoshop. You can then upgrade your software before trying again.
- Render Using Lightroom sends the raw file to Photoshop, but instead of Camera Raw rendering it, Lightroom does it itself. The advantage of letting Lightroom render the file is that doing so ensures that all your Lightroom adjustments are included in the rendered image, even if you used a feature in the most recent version of Lightroom that isn't in the version of Camera Raw on your computer. A potential downside is that as soon as you click the Render Using Lightroom button in the warning dialog, an RGB copy of the image is added in your Lightroom catalog, and it stays there even if you change your mind and close the image in Photoshop without saving. In that case, you now have the extra step of deleting the RGB copy from your Lightroom catalog.
- Open Anyway sends the raw file to Photoshop, and Camera Raw, not Lightroom, renders the file. This option doesn't guarantee that all your Lightroom adjustments are included in the rendered image. For example, if you have a newer version of Lightroom than Camera Raw, any new features you used in Lightroom that aren't in your version of Camera Raw won't appear in the image when it opens in Photoshop.

The moral of this story is that it's easier to keep your versions of Lightroom and Camera Raw in sync if at all possible.

If you subscribe to Adobe Creative Cloud, you can use the Adobe Creative Cloud app to update your software. If you're not a subscriber, choose Help > Updates in Lightroom or Photoshop (CS6 or earlier) instead.

When you update Photoshop, you get the latest version of Camera Raw too. If by some fluke, that doesn't happen, you may need to search Adobe.com for the latest version of Camera Raw and install it manually.

Sending a raw file from Lightroom to Photoshop

● **Note:** You can easily send other file formats, such as JPEGs, from Lightroom to Photoshop too. That topic is covered later in this lesson.

Once you adjust a raw photo in Lightroom, you may determine that you need to send it to Photoshop for some of the pixel-level editing voodoo that it excels at.

The process of sending raw files from Lightroom to Photoshop is easy, and it's the same process for a camera manufacturer's proprietary raw file (say, a .CR2 from Canon or an .NEF from Nikon) or a DNG file. This section teaches you how to do that.

Adjust the photo in Lightroom

When you're working with your own photos, begin by adjusting the photo's tone and color, which you learned about in the Lesson 2 section "Mastering the adjustment workflow: The big picture."

The basic adjustments have been completed for you on this exercise file; however, the photo has a perspective problem that you can easily fix using Lightroom's Upright adjustment. Here's how to do that:

▶ **Tip:** In Lightroom, filenames are displayed above thumbnails in the Library module's Grid view and at the top of the Filmstrip. If you don't see filenames in Grid view, press J on your keyboard several times to cycle through Grid view styles.

- 1 In Lightroom's Library module, select the Lesson 4 folder in the Folders panel. In Grid view or the Filmstrip, select the first exercise file (a photo of Trevi Fountain, in Rome), which is named LPCIB lesson 4-01.dng.
- 2 Press D on your keyboard to open the Develop module, or click Develop at the top of the workspace.

Notice that the fountain appears to be leaning backward in the photo.

- 3 In the Develop module, open the Lens Corrections panel and click Profile. Turn on Enable Profile Corrections and Remove Chromatic Aberration if they aren't turned on already.

This gives Lightroom more information about your camera and lens.

- 4 In the Transform panel, turn off Constrain Crop at the bottom of the panel, and then click the Auto button near the top of the panel.

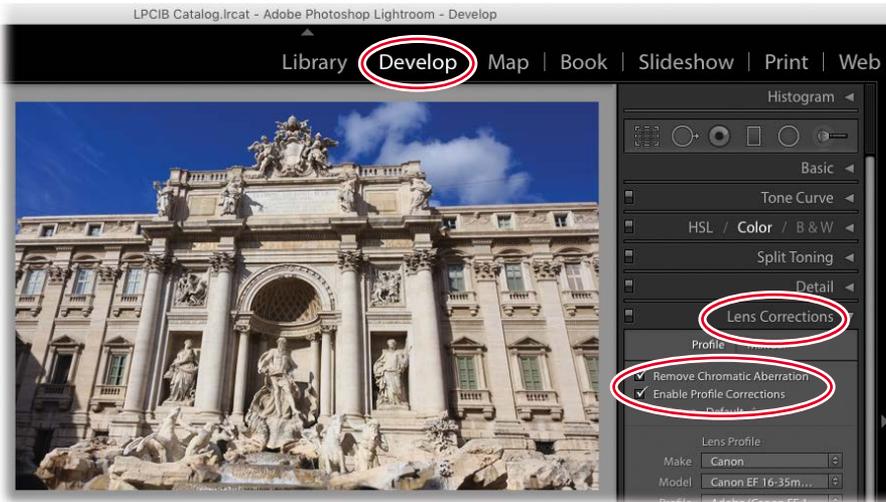
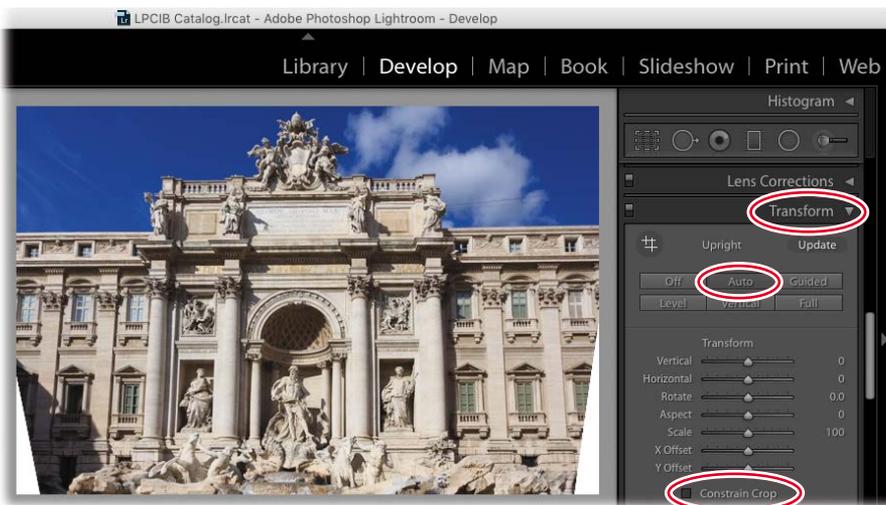


Photo credit: Lesa Snider, photoles.com

In this case, Auto did a great job of fixing the fountain's perspective. However, you may need to experiment with the other buttons on your own photos to see which one works best. Here's what they do:

- Auto gives you a balanced level, aspect ratio, and perspective correction. This option often produces the most realistic result.
- Level performs the correction based predominantly on the horizontal lines in the photo.
- Vertical performs the correction based predominantly on the vertical lines in the photo.
- Full performs a combination of all of the above. Although this option may produce the most accurate correction, the result may look unnatural.

► **Tip:** In some cases, you may not mind if Lightroom crops the photo in order to get rid of any white areas. To do that, turn on Constrain Crop (you can turn it on after you make the Upright adjustment too).



You can also use the Transform panel sliders to fine-tune the perspective correction.

The photo's perspective is fixed, but now there are white areas in the two lower corners (they're really empty, but since Lightroom doesn't support transparency, they appear white). Happily, you can easily fill in those areas in Photoshop, as the next section explains, which keeps you from having to crop them out.

Send the photo to Photoshop

In this section, you'll learn how to send the photo to Photoshop to fill in the empty corners of the Trevi Fountain exercise file. To do that, follow these steps:

● **Note:** It's important to realize that once you send a photo from Lightroom to Photoshop, any Lightroom adjustments you've made to it become permanent in the PSD file Photoshop sends back to Lightroom. For that reason, you may want to save some things—say, adding an edge vignette—until the file's returned to Lightroom.

▶ **Tip:** You can access the Photo > Edit In menu in the Develop, Library, and Map modules. It's also available in the Library module by right-clicking/Control-clicking one or more thumbnails and choosing Edit In from the resulting menu.

▶ **Tip:** If you can't see the whole photo in Photoshop, press Ctrl+0/Command+0 to fit it onscreen.

- 1 Choose Photo > Edit In > Edit in Adobe Photoshop CC (or whatever version you're using). Alternatively, you can press Ctrl+E/Command+E.

Photoshop opens (it also launches if it isn't already running), and Lightroom passes the raw file to Photoshop.

Behind the scenes, the Camera Raw plug-in renders the raw file so you can see and edit it in Photoshop. Any adjustments you made in Lightroom are made permanent in the image that opens in Photoshop. (Of course, your adjustments are flexible in the original file back in Lightroom.)

- 2 In Photoshop, duplicate the image layer by pressing Ctrl+J/Command+J.

Rename the layer by double-clicking its name and then entering **corner fill**.

Duplicating the layer protects your original image in Photoshop. Renaming the duplicate layer helps you remember what you did on that layer should you need to reopen this PSD later on.

- 3 Load the layer as a selection by Ctrl-clicking/Command-clicking the layer thumbnail of the duplicate layer.

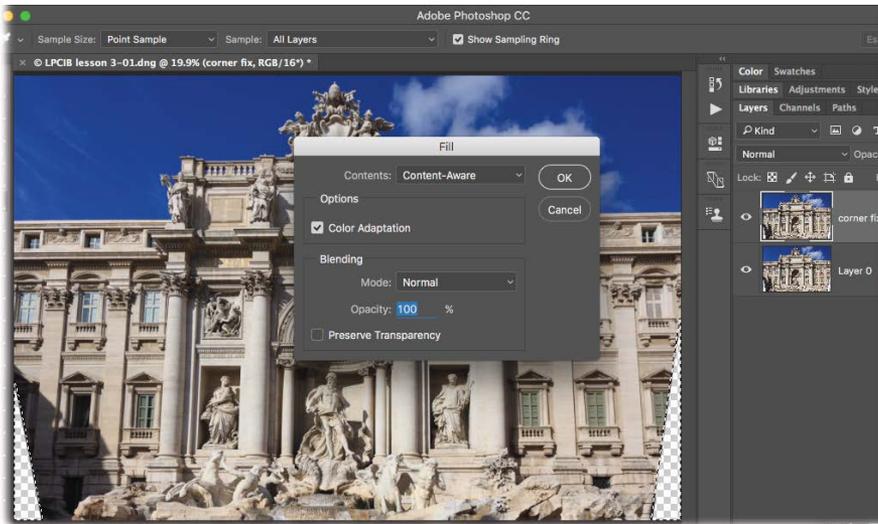
You should now see marching ants around the photo itself.

- 4 Invert the selection by pressing Shift+Ctrl+I/Shift+Command+I or by choosing Select > Inverse.

The marching ants now appear around the empty corners.

- 5 Expand the selection by choosing Select > Modify > Expand. In the resulting dialog, enter **3**, and click OK.

- 6 Choose Edit > Fill, and in the resulting dialog, choose Content-Aware from the Contents menu and turn on Color Adaptation. Leave the Mode menu set to Normal and Opacity set to 100%. Ensure that Preserve Transparency is turned off. Click OK, and Photoshop fills the empty corners.



- 7 If the fix isn't perfect, you can retouch that area using the Clone Stamp tool. To do that, press Shift+Ctrl+N/Shift+Command+N to create a new layer. In the resulting dialog, enter **clone right corner** into the name field, and then click OK.
- 8 Zoom in to the photo by pressing Ctrl++/Command++. Press and hold the Spacebar on your keyboard, and then drag to reposition the photo so you can see the bottom-right window.
- 9 Activate the Clone Stamp tool in the tool panel by pressing S on your keyboard. In the options bar at the top of the Photoshop workspace, ensure that the Mode menu is set to Normal and that Opacity and Flow are set to 100%. Turn on Aligned, and from the Sample menu, choose All Layers.

● **Note:** Technically, you don't have to use Lightroom's Edit In command to open an edited file in Photoshop. You could use Lightroom's Export command (see Lesson 9) and then open the exported file in Photoshop. Doing so decreases your editing flexibility greatly because the resulting PSD never shows up in Lightroom. You also end up with an extra copy of the image (the exported one) on your hard drive.



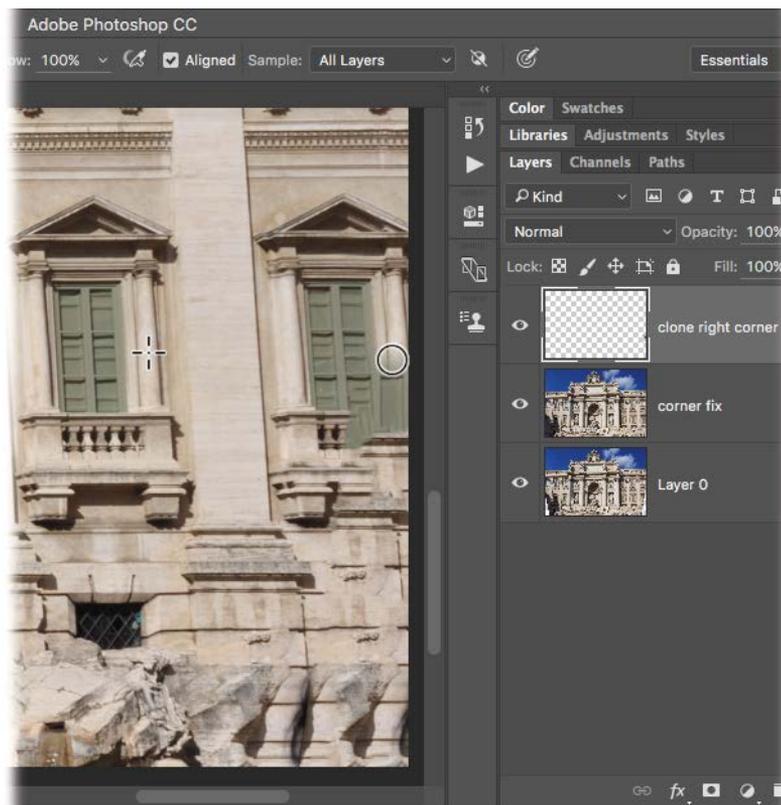
● **Note:** Using the Clone Stamp tool on an empty layer, rather than on a duplicate image layer, keeps your Photoshop document lean in file size.

- 10 Tell Photoshop which pixels to copy for the Clone Stamp tool by Alt-clicking/Option-clicking the top of the triangle on the window to the left of the one that needs fixing (your cursor turns into a tiny target).

This is known as setting a sample point for the Clone Stamp tool.

- 11 Release the modifier key, mouse over to the top of the triangle of the window that needs fixing, and brush across the window all the way down to the bottom of it.

As you brush across the window, a crosshair shows the area that Photoshop is copying pixels from—the window on the left. In some cases, you may need to adjust brush size and set new sample points as you go by Alt-clicking/Option-clicking another area and dragging.



Now that the lower-right corner is fixed, you're ready to send the photo back to Lightroom, which is what the next section is all about.

● **Note:** You can also send a raw file from Lightroom to Photoshop as a Smart Object, which has some unique benefits. You'll learn how to do that later in this lesson.

Send the photo back to Lightroom

When you're finished editing in Photoshop, all you have to do is save and close the photo. As long as Lightroom is open and running when you do this, the PSD appears in your Lightroom catalog next to the original photo.

Give this a spin by following these steps:

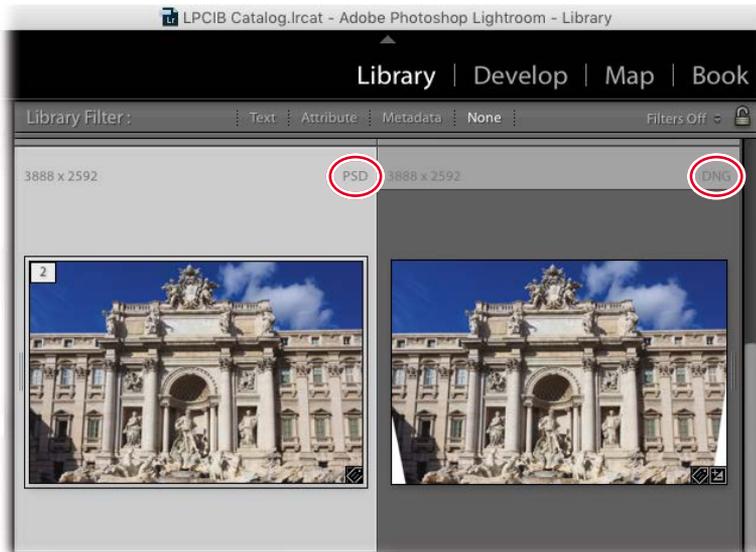
- 1 In Photoshop, choose File > Save (or press Ctrl+S/Command+S) to save the file. Close the Photoshop document by choosing File > Close or by pressing Ctrl+W/Command+W.

Technically, you can use the File > Save As command to rename the file, but it's important that you don't change the file's *location*. If you do, Lightroom won't be able to find it.

- 2 In Lightroom, press G to return to the Library module's Grid view, and the PSD appears next to the original raw file.

Notice the file formats at the upper right of each thumbnail: One is a PSD, and the other is a DNG.

The raw file displays the adjustments you made to it in Lightroom before you sent it to Photoshop. The Photoshop file reflects your Lightroom adjustments as well as the filling and cloning you did in Photoshop. As mentioned earlier, your Lightroom edits are permanent in the PSD file. That said, you can reopen the PSD file and continue editing it if you need to, which you'll do later in this lesson.



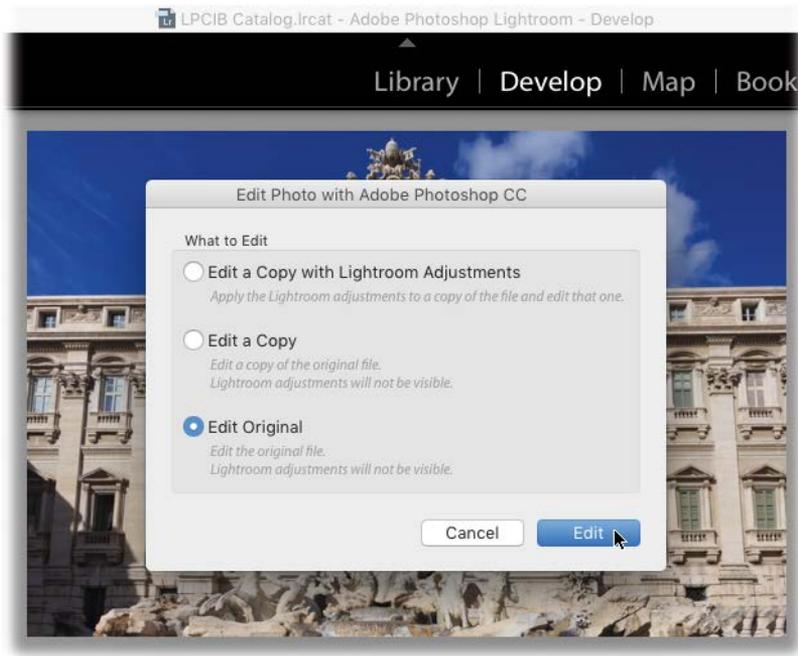
- 3 Leave the photo open because you'll use it in the next exercise.

Reopen the PSD for more editing in Photoshop

If you determine that you have more editing to do in the PSD that came back to Lightroom, you can easily reopen it. For example, you may decide to do a bit more cloning in the lower-right corner. Follow these steps to do that:

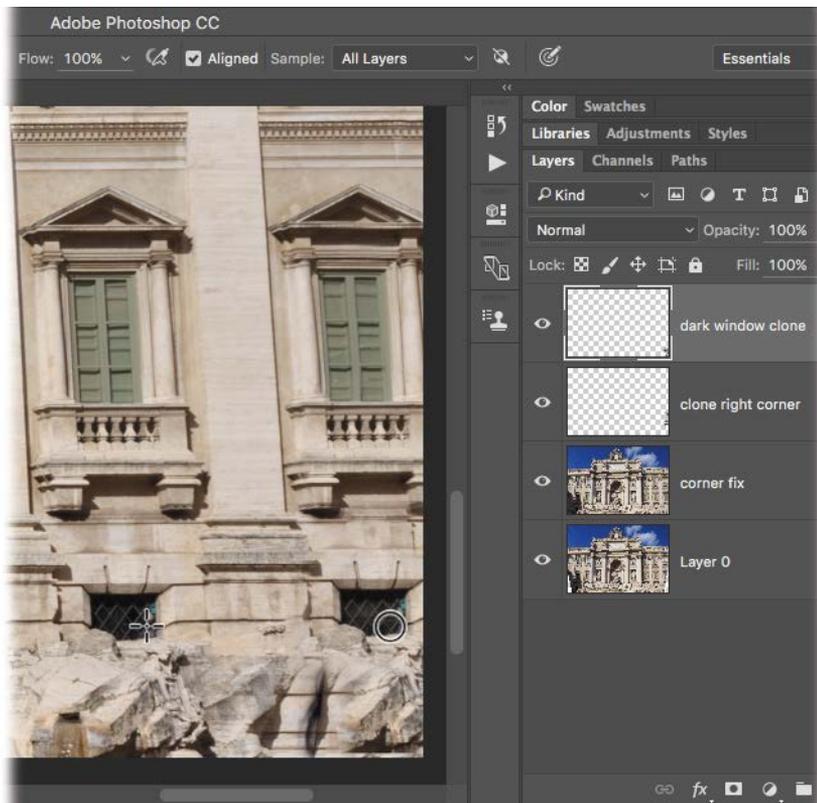
- 1 Select the PSD in Lightroom's Library module, and press Ctrl+E/Command+E.
- 2 In the dialog that opens, choose Edit Original, and click Edit to open the layered PSD in Photoshop.

Choosing *any* other option in this scenario will not open the layered PSD. Instead, you'll open a flattened copy of the PSD. (You'll use the other options later in this lesson.)



- 3 When the layered PSD opens in Photoshop, add a new layer, and use the Clone Stamp tool as described earlier to clone the small, dark window at lower right beneath the window you fixed earlier.
- 4 Save the PSD by pressing Ctrl+S/Command+S. Close the document by pressing Ctrl+W/Command+W.

The updated PSD returns to Lightroom with your changes intact. Now you're ready to add final adjustments to the PSD in Lightroom.



Add final adjustments to the PSD in Lightroom

Once you've taken a raw file from Lightroom to Photoshop and back again, you may be finished editing; however, you may have a thing or two left to do to the file. In that case, you can use Lightroom to edit the PSD.

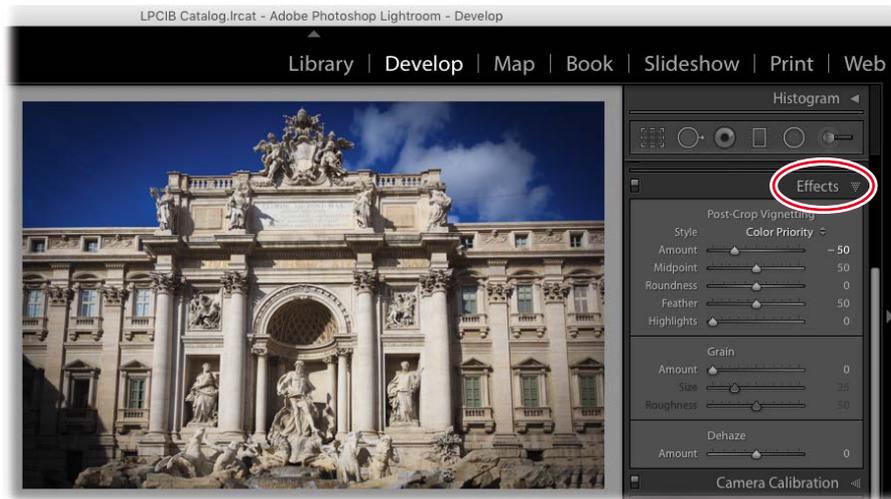
A perfect example of the kind of editing you may do to a PSD is to add finishing touches, such as an edge vignette, or one of the creative color effects you learned in the Lesson 3 section "Adding creative color effects."

Generally speaking, try to avoid redoing any of the *original* adjustments you made in Lightroom's Basic panel because that can complicate your workflow. If, for whatever reason, you need to reopen the PSD, it won't include those additional Lightroom adjustments (this is due to the special flattened layer Photoshop includes in the file, which you learned about in the section "Configuring Photoshop's Maximize Compatibility preference"). And if you open a copy of the PSD that *includes* the Lightroom adjustments, you lose the layers you originally made in Photoshop.

● **Note:** If you add the edge vignette to the PSD and then realize you have more cloning to do, you'll have to add the edge vignette again to the updated PSD that comes back to Lightroom.

When you're certain you're finished editing the file in Photoshop, add an edge vignette to the Trevi Fountain PSD by following these steps:

- 1 In Lightroom, select the PSD of the Trevi Fountain. If necessary, press D to open the Develop module—you may already be in the Develop module—and then open the Effects panel.
- 2 In the Post-Crop Vignetting section of the panel, set the Style menu to Color Priority, and then drag the amount slider leftward to around -50.



Saving the edge vignette until *after* you finish editing the photo in Photoshop is smart in this case because you had a lot of retouching to do around the edges of the photo, which is exactly where a post-crop vignette made with Lightroom's Effects panel lands.

In the next section, you'll learn how to send a JPEG from Lightroom to Photoshop.

Sending a JPEG or TIFF from Lightroom to Photoshop

When you send any file format *other* than a raw photo from Lightroom to Photoshop, Lightroom questions you as to *what* it should send to Photoshop. The choice you make determines whether or not the edits you've made in Lightroom tag along for the ride over to Photoshop.

In this section, you'll send a JPEG to Photoshop for the purpose of using Photoshop's beautiful photographic toning presets to apply a unique color tint to the photo. Here's how to do it:

- 1 In Lightroom's Library module or the Filmstrip in the Develop module, select the female portrait exercise file (it's a photo of your author).
- 2 Open the photo in Photoshop by pressing Ctrl+E/Command+E.
- 3 In the Edit Photo dialog that opens, choose Edit a Copy with Lightroom adjustments, and click Edit.

● **Note:** This dialog is exactly the same one you encountered when you reopened a PSD from inside Lightroom earlier in this lesson.

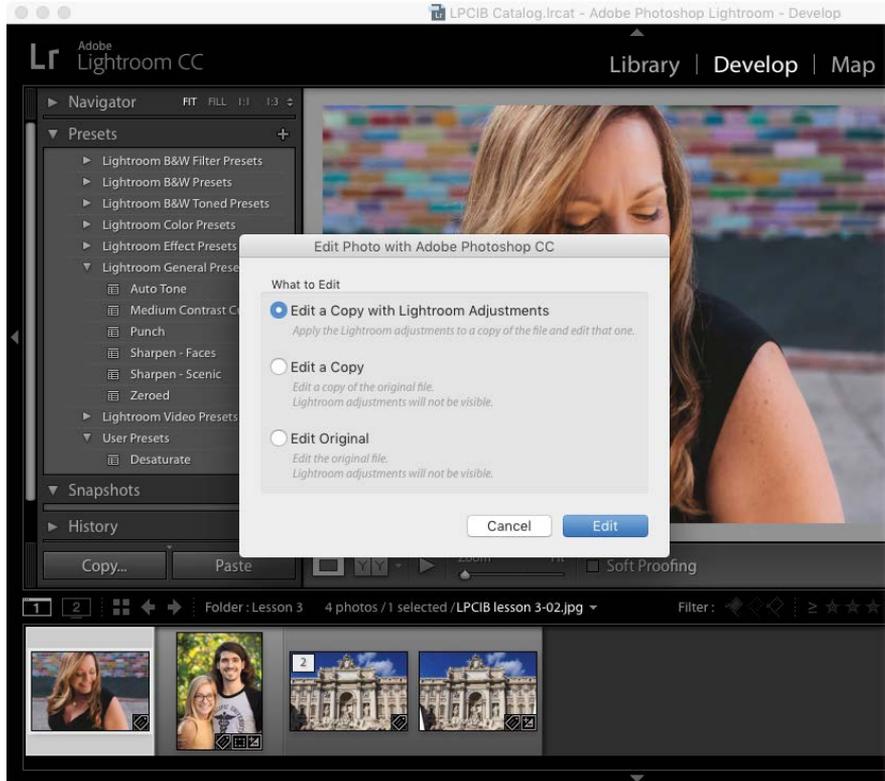
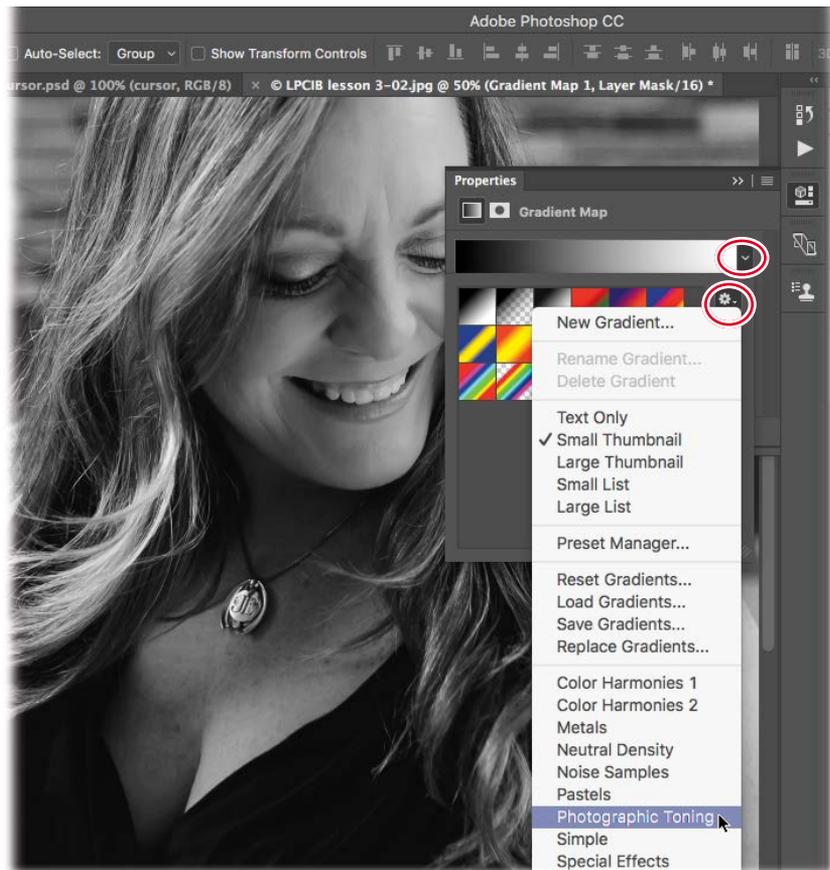


Photo credit: Allison Mae, allisonmae.com

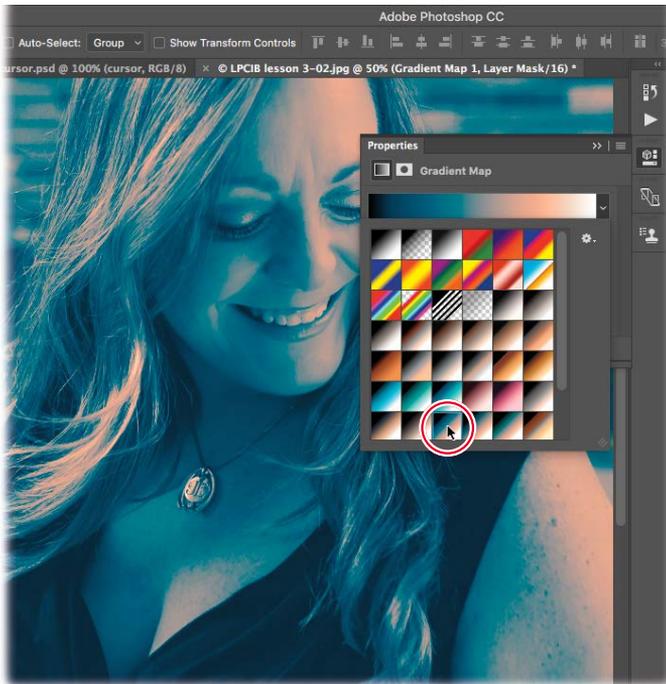
The image opens in Photoshop with your Lightroom adjustment applied. Choosing any other option in the Edit Photo dialog would prevent your Lightroom adjustments from being visible once the file opens in Photoshop.

- 4 In Photoshop, choose Layer > New Adjustment Layer > Gradient Map. Alternatively, click the half-black/half-white circle at the bottom of the Layers panel, and choose Gradient Map from the resulting menu.

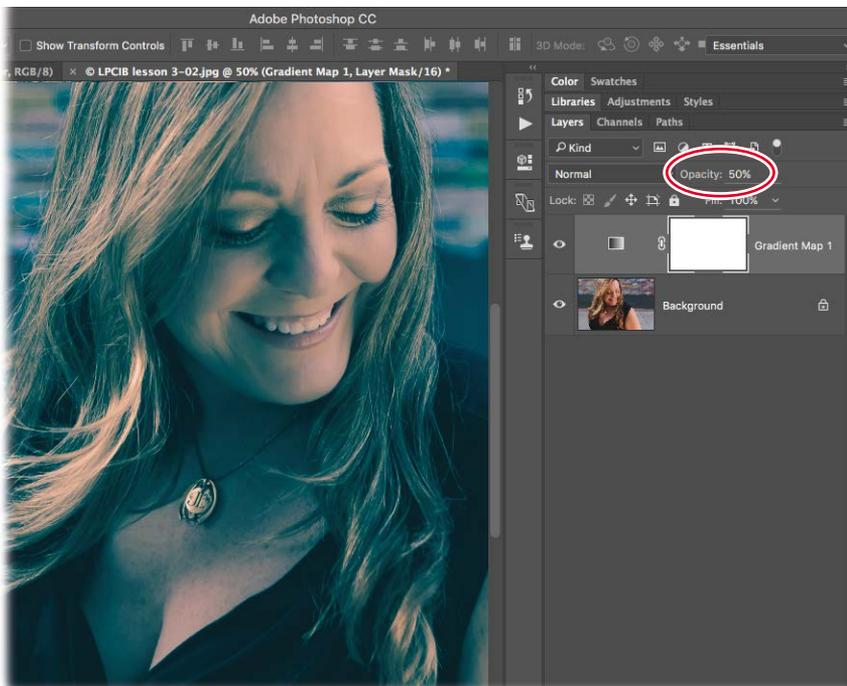
- 5 In the Properties panel that opens, click the down-pointing triangle to the right of the gradient preview. From the panel that appears, click the gear icon, and in the resulting menu, choose Photographic Toning.



- 6 When the dialog opens asking if you want to replace or append the new presets to the panel, click Append.
- 7 When the new presets appear in the panel, click one to apply it to the photo (Sepia-Cyan was used here).



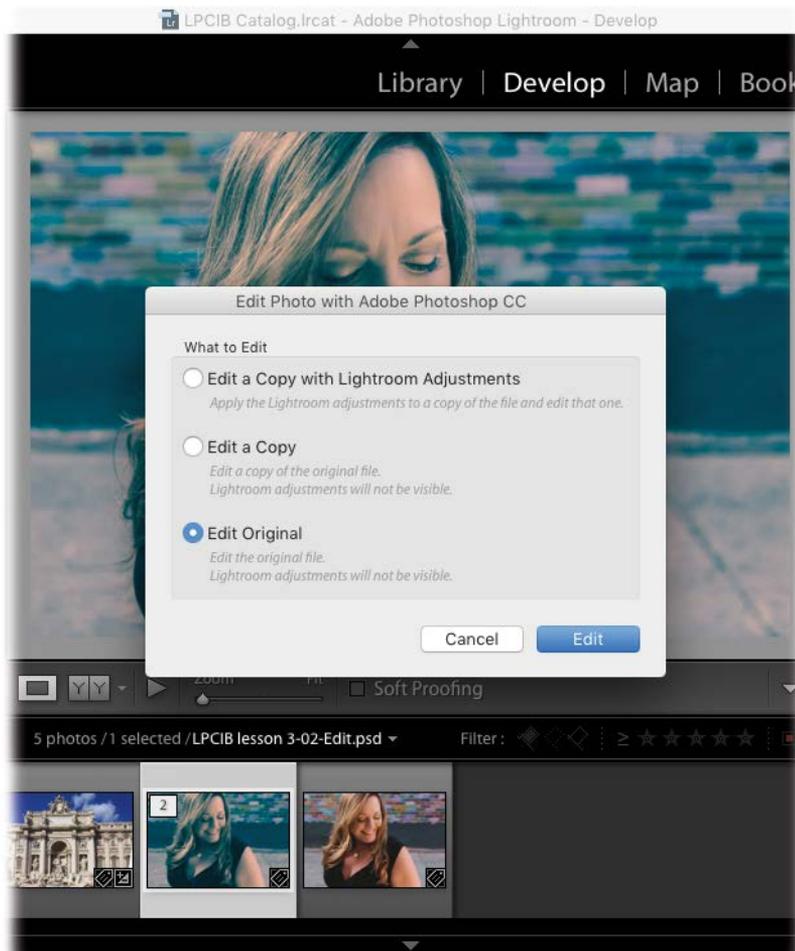
- 8 To reduce the strength of the color tint, lower the Opacity setting at the top of the Layers panel to what looks good to you (50% was used here).



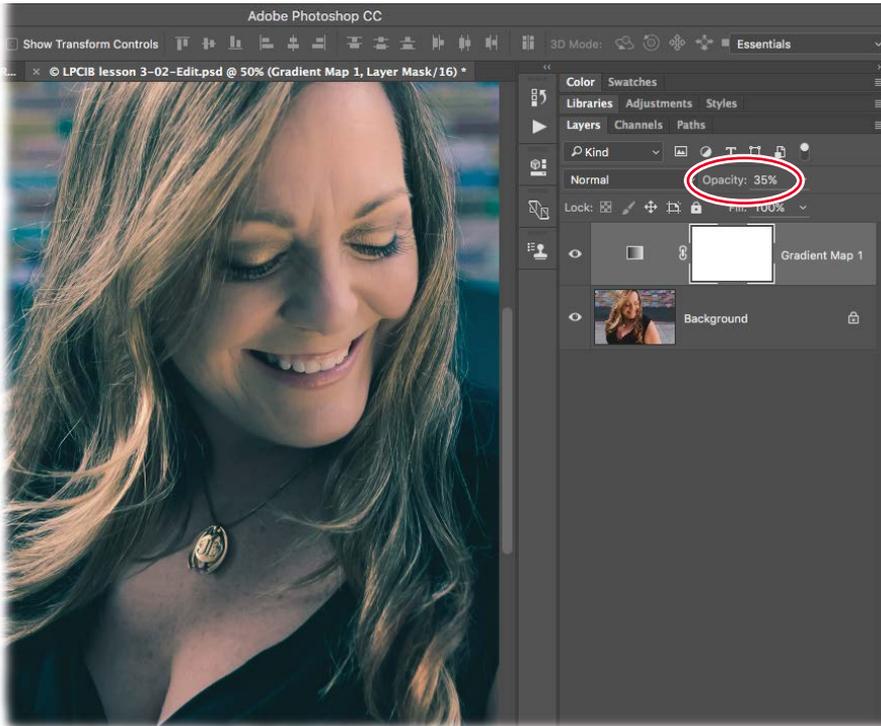
- 9 Choose File > Save, or press Ctrl+S/Command+S. Close the file by pressing Ctrl+W/Command+W.

In Lightroom, the PSD appears next to the original JPEG in the Filmstrip.

- 10 If you decide to change the opacity of the Gradient Map adjustment layer you applied in Photoshop, select the PSD in the Filmstrip, and reopen it in Photoshop by pressing Ctrl+E/Command+E.
- 11 In the Edit Photo dialog that opens, choose Edit Original and click Edit.



- 12** In Photoshop, activate the Gradient Map adjustment layer, and adjust the Opacity setting at the top of the Layers panel to around 35%.



- 13** Choose File > Save or press Ctrl+S/Command+S. Again, close the file by pressing Ctrl+W/Command+W.

Your changes are updated in the PSD that appears in Lightroom.

Sending a photo from Lightroom to Photoshop as a Smart Object

Another way to send files of any format to Photoshop is to send them as Smart Objects, which you can think of as a protective wrapper. Anything you do to a Smart Object happens to the wrapper and not to the photo inside it. Smart Objects also let you do stuff like resize and run filters on the photo without harming the original.

When you send a *raw* file to Photoshop as a Smart Object, the Smart Object stays in raw format too. This enables you to fine-tune it using Photoshop's Camera Raw plug-in if the photo needs a last-minute tweak while you're in Photoshop. This trick

Note: Adobe Photoshop Elements doesn't support Smart Objects, so you won't see this option if you're using Elements as your external editor.

also lets you access any snapshots (saved image states or versions) you've made in Lightroom via the Camera Raw plug-in's Snapshots panel, which is handy for experimenting with different image versions while you're in Photoshop.

In the following sections, you'll learn how to do all of the above.

Accessing snapshots in Photoshop's Camera Raw plug-in

As you learned in the section "Undoing adjustments and saving multiple versions" in Lesson 2, creating snapshots in Lightroom is a fabulous way to save different versions of a photo.

When you create snapshots on a raw file, you can access them via the Camera Raw plug-in by sending the raw file to Photoshop as a Smart Object. Here's how to do that:

- 1 In Lightroom, select the portrait of the young couple in the Filmstrip of the Develop module.
- 2 In the Snapshots panel on the left, click the plus icon (+) to create a snapshot of the full-color photo. In the resulting dialog, enter the name **full color** and click Create.

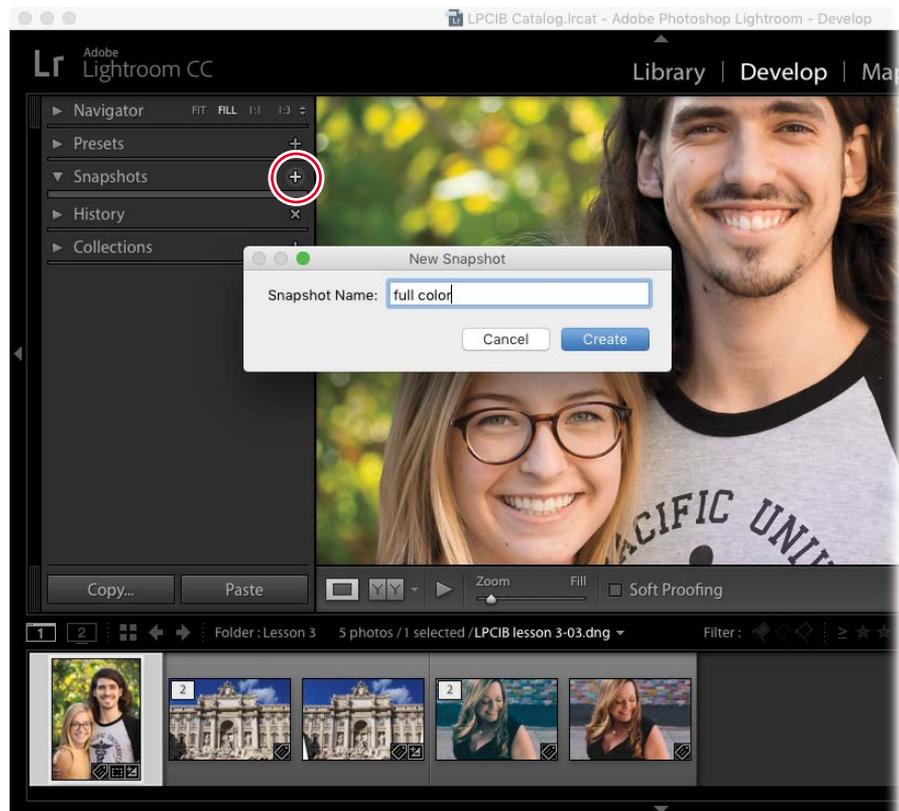
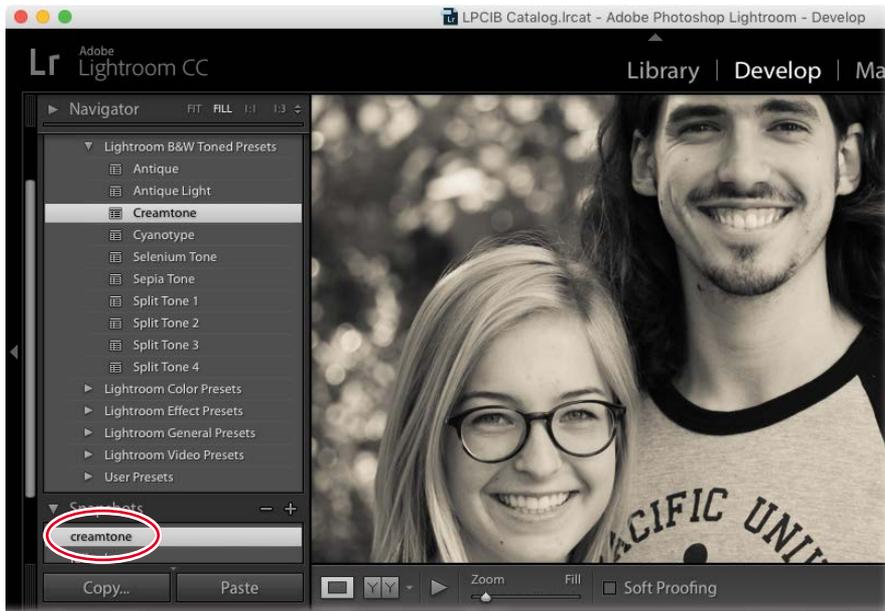


Photo credit: Jack Davis, wowcreativearts.com

- 3 In the Presets panel, also on the left, click to expand Lightroom B&W Toned Presets, and click Creamtone.
- 4 Repeat step 2 to create a new snapshot named **creamtone**.



- 5 Choose Photo > Edit In > Open as Smart Object in Photoshop.

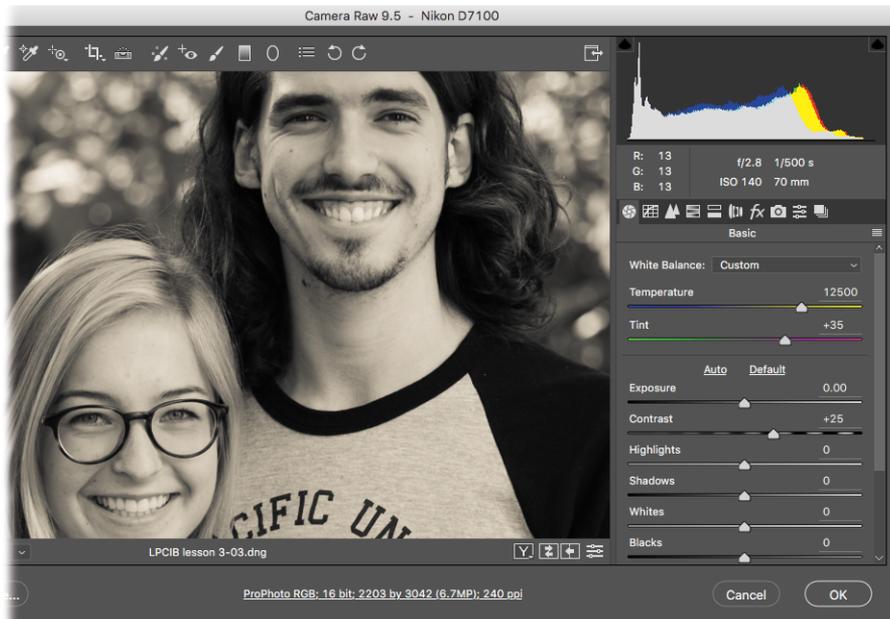
The photo opens in Photoshop.

- 6 In Photoshop, double-click the Smart Object's layer thumbnail to open the photo in the Camera Raw plug-in.

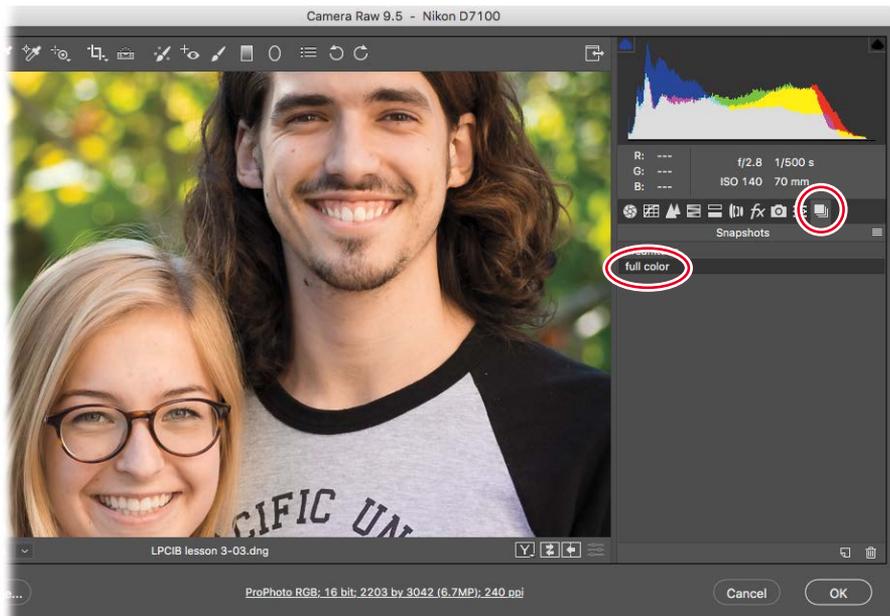
The Camera Raw window opens to the Basic panel, which includes the same set of sliders found in Lightroom's Basic panel. If, for whatever reason, the photo needs a last-minute tone or color adjustment while you're in Photoshop, you can perform that here.

You can also access much of Lightroom's Develop module panels by clicking the tiny tabs beneath the histogram.

For the purpose of this exercise, let's look at how to access the snapshots you made in Lightroom here in Camera Raw.



- 7 Click the last tab beneath the histogram to open the Snapshots panel. In the resulting panel, click “full color” to access that snapshot. Click OK to close the Camera Raw plug-in.
- 8 You’ll use the same version of this photo in the next exercise, so keep it open in Photoshop (in other words, don’t save it yet).



As you can see, it's easy to access snapshots you make in Lightroom via the Camera Raw plug-in while you're in Photoshop. That said, it bears repeating that this maneuver works *only* on raw files.

Running filters on a Smart Object in Photoshop

Another incredibly handy trick you can do when you send a photo from Lightroom to Photoshop as a Smart Object is to run filters *nondestructively*. Doing so prevents the filter from harming the image because the filter happens to the Smart Object wrapper instead of to the image.

● **Note:** You can send any file format to Photoshop as a Smart Object; it doesn't have to be a raw file.

When you use Smart Filters, as this is called, the filter appears in your Layers panel beneath the Smart Object layer. You also get a filter mask (think digital masking tape) that you can use to hide the filter's effects from parts of the image.

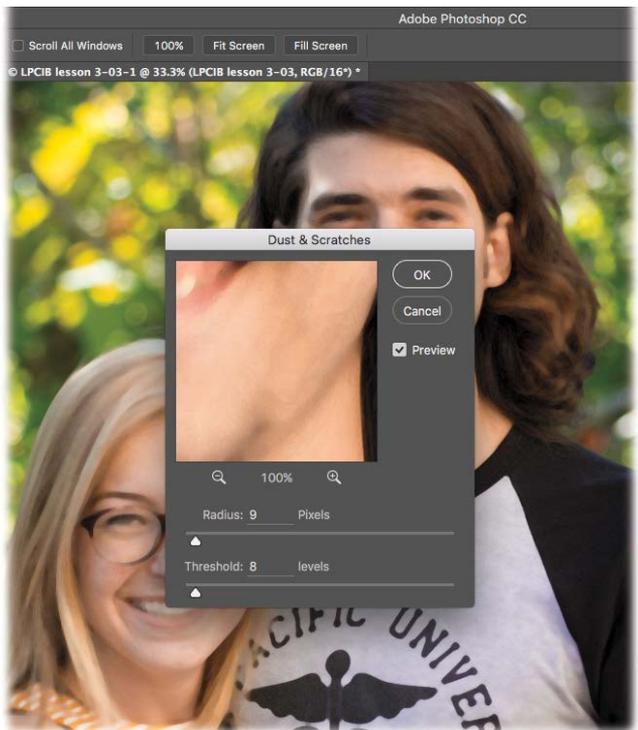
In the following exercise, you'll use Photoshop's Dust & Scratches filter to soften the young man's whiskers in this portrait.

- 1 With the young couple portrait open in Photoshop as a Smart Object, choose Filter > Noise > Dust & Scratches.
- 2 In the dialog that opens, set Radius to around 9 and the Threshold slider to around 8. Click OK.

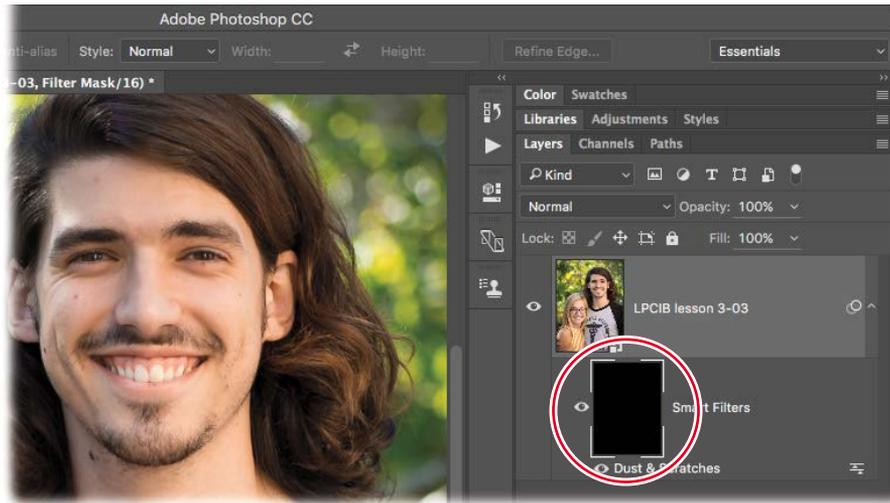
▶ **Tip:** Drag within the preview inside the Dust & Scratches dialog to view an important area of the photo. In this case, that's the young man's whiskers.

The goal is to increase Radius enough to soften the young man's whiskers and then adjust Threshold to control the point at which the filter kicks in. Keep Threshold as low as possible but high enough to preserve the skin texture. You'll need to experiment with these settings on your own photos to find a balance that produces the results you want.

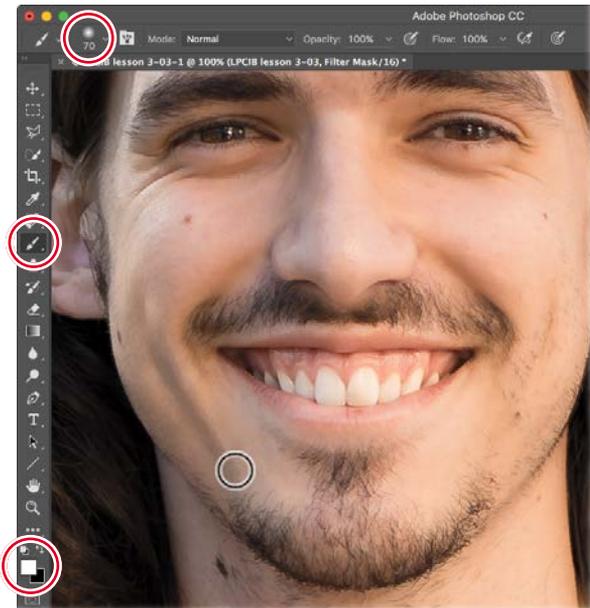
- 3 To hide the filter from everywhere except the young man's whiskers, click to activate a mask (it looks like a white thumbnail) beneath the Smart Object layer in your Layers panel. When you do, white corner brackets appear around the mask.



- 4 Invert the mask from white to black by pressing Ctrl+I/Command+I. In the realm of masks, black conceals and white reveals. By filling the mask with black, the filter is hidden from the entire photo.



- 5 Activate the Brush tool in the Tools panel by pressing B on your keyboard. In the Options panel at the top of the Photoshop workspace, click the brush preview, and choose a soft-edge brush (one that has fuzzy, soft edges). Click the brush preview icon again to close the panel.



- 6 Press D on your keyboard to set the color chips at the bottom of the Tools panel to their default values of black and white, and then press X on your keyboard until white is on top.
- 7 Zoom in to the photo by pressing Ctrl++/Command++. Mouse over to the photo, and brush across the stray whiskers on the young man's face and neck to reveal the filter in those areas.

Be careful not to brush across any areas that you don't want blurred. In this case, that's his moles and the edge of his chin where it meets his neck.

- ▶ **Tip:** Adjust brush size as necessary using the Left Bracket and Right Bracket keys on your keyboard. Press the Left Bracket ([]) to decrease brush size or the Right Bracket (]) to increase it.

- 8 When you're finished, press Ctrl+S/Command+S to save the file. Close the document by pressing Ctrl+W/Command+W. As you can see in this before (left) and after (right) version, this filter made a big difference in the portrait.

► **Tip:** This Dust & Scratches filter trick is also a great way to soften wrinkles!



Back in Lightroom, the PSD appears next to the original raw file. If you determine that you need to reopen the PSD for more editing, follow the instructions in the previous section.

Although there are other ways to send files to Photoshop from Lightroom, which you'll learn about later in this book, these are the most common methods.

Using third-party plug-ins

If you use a third-party plug-in in Photoshop, say, Alien Skin's Exposure X or the Google Nik collection, simply use the plug-in as you normally would and the results are saved in the PSD that Photoshop sends back to Lightroom. If you use a third-party plug-in in Lightroom, you can access it in the Photo > Edit In menu. Lightroom asks what options you want to open the image with: file format, color space, and so on. Some plug-ins, such as Exposure X, can't read PSD files so use TIFF instead. The end result is an additional file in your catalog.

Review questions

- 1 Can you set up more than one configuration of Photoshop settings for opening photographs from Lightroom in Photoshop?
- 2 What is the keyboard shortcut for Photo > Edit In > Edit in Adobe Photoshop CC (or the latest version of Photoshop installed on your computer)?
- 3 When you hand off a raw file from Lightroom to Photoshop by pressing Ctrl+E/Command+E, which program is rendering the photograph so you can see and work with it in Photoshop?
- 4 After you pass a raw file from Lightroom to Photoshop and save it in Photoshop, what format file appears in your Lightroom catalog alongside the raw file?
- 5 When you reopen a PSD in Lightroom that you made additional Lightroom adjustments to, can you see those final adjustments in Photoshop using the Edit Original command?
- 6 Is it possible to access snapshots you made in Lightroom while you're in Photoshop?

Review answers

- 1** Yes. In addition to configuring the primary external editor, you can set up additional configurations for the same editor, or a different one, in the Additional External Editor section. When you save additional configurations as a preset, they appear as a menu item in Lightroom's Photo > Edit In menu.
- 2** Ctrl+E/Command+E.
- 3** Photoshop's Camera Raw plug-in does the rendering when you pass a raw file from Lightroom to Photoshop by pressing Ctrl+E/Command+E.
- 4** Passing a raw file from Lightroom to Photoshop and saving it in Photoshop generates a PSD file. That said, if you picked TIFF in Lightroom's External Editing preferences, you get a TIFF instead.
- 5** No. When you reopen a PSD that you've edited in Lightroom using the Edit Original option in the Edit Photo dialog, the last round of adjustments you made in Lightroom are not visible in Photoshop due to the special flattened layer that Photoshop includes in the document. Therefore, you'll have to redo those adjustments once the edited PSD returns to Lightroom.
- 6** Yes, but only for raw files. If you create snapshots for a raw file and then send it to Photoshop as a Smart Object, you can double-click the Smart Object in Photoshop to open the Camera Raw plug-in. When it opens, click the Snapshots panel, and you'll see all the snapshots it contains.

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